

**Review of FSC Certification Impacts:  
Experience of Natural Forest Concessionaires within IDH and TBI support  
in Indonesia**

A thesis

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by

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## ABSTRACT

Voluntary certification is an option to support the sustainable environmental, economic and social development of enterprises operating in natural forests. FSC certification is the oldest and most preferred voluntary scheme for natural forest concessionaires in Indonesia. After three decades, the progress of certification in Indonesia is considered slow and still depends on financial support from foreign donors such as IDH. Consequently, this research has been undertaken to: 1) understand the problems faced by natural forest concessionaires prior to certification; 2) review the impacts of certification regarding costs, advantages, disadvantages and challenges; 3) understand the causes of certification withdrawal through a case in the concessionaires with suspended FSC certification status, namely KLIA and BIOS operating in natural mangrove forests. The impacts of certification at the concessionaire level have been analysed by examining public audit summaries paired with a survey of the concessionaire managers. This research was undertaken to focus on companies under IDH and TBI support in Indonesia that represent more than 50% of the natural forest enterprises certified by FSC in the country in 2018.

Audit reports and the survey revealed that significant improvements in forest management have occurred as a result of certification, especially in environmental and health and safety features. These aspects were found to be the most frequently mentioned issues before certification in more than 80% of assessed logging companies. This research also found that the estimated cost of certification ranges from less than US\$2 to US\$7/ha. The estimated price premium and additional sales as a result of certification varied from 0% to 20% and 0% to 40% respectively. The disadvantages of certification were found to be the costs (preparation and audits) and the length of time taken in the process of certification. Meanwhile, raising staff awareness and post-certification costs remain as considerable challenges after the certificate has been granted. The case study found that certification might be more challenging in small business operations and non-integrated companies although the group scheme has been widely promoted to address the cost issue. Hence, small enterprises continue to depend on the assistance of external parties. Overall, FSC certification impacts on the social and environmental factors are considered prominent while monetary benefits are still low.

Keywords: Natural forest concessionaires, FSC certification, environment, health and safety, certification cost, price premium, and staff awareness.

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*Christchurch, 17 January 2019*

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## List of Abbreviations

|         |   |
|---------|---|
| APCS    | : Asia Pacific Consulting Solution  |
| APHI    | : Indonesian Forest Concessionaires Association   |
| BIOS    | : Bina Ovivipari Semesta  |
| CAR     | : Corrective Action Request   |
| CB      | : Certification Body  |
| CoC     | : Chain of Custody  |
| FM      | : Forest Management   |
| FME     | : Forest Management Enterprise  |
| FMU     | : Forest Management Unit  |
| FSC     | : Forest Stewardship Council  |
| GFTN    | : Global Forest Trade Network   |
| HCV     | : High Conservation Value   |
| IDH     | : Initiative Dagang Hijau   |
| IFCC    | : Indonesian Forest Certification Cooperation   |
| KLIA    | : Kandelia Alam   |
| MoEF    | : Ministry of Environment and Forestry of Republic Indonesia                                |
| OJK     | : <i>Otoritas Jasa Keuangan</i> (Indonesia Financial Service Authority)                     |
| PEFC    | : The Programme for The Endorsement of Forest Certification                                 |
| PHPL    | : <i>Pengelolaan Hutan Produksi Lestari</i> / Sustainable Production Forest Management      |
| RIL     | : Reduced Impact Logging  |
| TBI     | : The Borneo Initiative   |
| TFF     | : Tropical Forest Foundation  |
| TFT     | : The Forest Trust  |
| TNC     | : The Nature Conservancy  |
| UN-REDD | : The United Nation Programme on Reduction Emission from Degradation and Forest Degradation |
| WWF     | : World Wide Fund for Nature  |

# CHAPTER 1

## INTRODUCTION

### 1.1. Background to the study

The sustainability issue has gained significant worldwide attention over the last few decades. This issue has brought to the fore the importance of economic, social and environmental considerations and the importance of the way they interrelate. Sustainable management has also become a popular business strategy that has emerged in response to the environmental crises faced by the global community today. The forestry business is no exception, especially for those operating in developing nations. Whilst sustainability may be a new idea in some sectors, in the forestry sector, sustainability has long been at the heart of the sustainable forest management concept. Unfortunately, the actual implementation has not been as successful as the fundamental principles require and in fact has resulted in significant examples of mismanagement as in the case of Indonesia's natural forests.

From 1966 until the late 1980s, the forestry sector in Indonesia had a strong economic position through its involvement in the plywood industry and log exports, which was the second largest income earner nationally following oil and gas. At this time, Indonesia was known to be the world's biggest log exporter and the world's largest producer of plywood (MoEFI, 2018). Following the economic downturn of 1998, there was a significant increase of natural forest destruction and it threatened the effective implementation and adoption of sustainable forest management. This, along with other factors such as population growth, land-use changes, infrastructure developments, new policies, forest fires and global environmental factors, caused the country to suffer from severe deforestation. Consequently, domestic and international organisations put considerable pressure on Indonesia to improve forest management and policies (Muhtaman & Prasetyo, 2006). In addition, markets forced the forestry companies in Indonesia to have certified products (EARTH, 2001). As the related policies evolved, and the friendly environmental mindset has grown stronger, the result is that today natural forest concessionaires are considered to no longer be as economically promising as they once were, thus weakening, and in fact threatening the importance of the concept of sustainability in managing natural production forests. This circumstance is explained by the fact that the number of natural forest concessionaires gradually decreased from 277 to 259 in 2013–2017 (MoEFI, 2017).

Conversely, however, the potential of natural forest concessions remains considerable. According to the statistics published by the Ministry of Environment and Forestry of Republic of Indonesia in 2017, there was still 2.02 million ha of land without any licences that could potentially be used for natural forest concessions. Natural forest concessions also provide more employment compared with plantation forest concessions, where the employment numbered 20,167 people, while in the plantation industries it was 18,837 people in 2017. In addition, veneer, one of the main products from natural forests, remains a promising export commodity for Indonesia as the export value grew from US\$24.7 M to US\$ 77.5 M in 2014–2017. This situation leads to the need to support the existing natural forest concessionaires to operate sustainably, hence employment opportunities and significant economic values are not diminished. Furthermore, natural forest concessionaires can help protect the forests from illegal logging and encroachment whilst also ensuring the maintenance of environmental values. Therefore, forest certification can connect the dots for these concerns.

Indonesian commitment to enforcing the implementation of sustainable forest management has been shown through the Timber Legality Assurance System (Indonesia TLAS) and Sustainable Production Forest Management (PHPL) certifications. Those two mandatory schemes have gained successful recognition in EU markets following the operationalising of the Indonesia–EU Voluntary Partnership Agreement (VPA) in 2016. However, a voluntary scheme (e.g., FSC and PEFC) is still needed and remains attractive, especially for natural forest concessionaires in Indonesia. Some of the reasons are that not all the export destination countries accept the mandatory schemes (Gumelar, 2017), the end buyers preferred FSC and PEFC compared to TLAS, and FSC provides better image branding than TLAS (Pratiwi, Wibowo, & Giessen, 2015).

FSC certification promotes advantages including broadening market access, refining the public image, obtaining a price premium (Chen, Innes, & Tikina, 2010), improving the conservation status and enhanced biodiversity levels in forests (WWF, 2005) as well as reducing social impacts through firewood dependence, respiratory infections, and malnutrition (Miteva, Loucks, & Pattanayak, 2015). Unfortunately, FSC certification has had a very slow uptake, especially in developing countries, jeopardising its initial goals to save the natural tropical forests. Various challenges were suggested: the high cost of certification, irrelevant requirements, and lack of market and government incentives that prevent natural forest concessions from becoming certified in Indonesia (Ruslandi, Klassen, Romero, & Putz, 2014).

Nevertheless, FSC certification keeps evolving and many efforts have been made to reduce constraints and barriers while optimising the benefits, for example, the development of a code of practice in some regions, simplified certification procedures (Durst, McKenzie, Brown, & Appanah, 2006) as well as the availability of international donors and certification coaches (Romero, et al., 2015). These can be seen as promising opportunities to support the implementation of forest certification in the tropics. In Indonesia, the number of FSC-certified natural forest management units (FMUs) considerably increased because of these factors. IDH Sustainable Trade Initiative, and its affiliation in Indonesia, Yayasan Inisiatif Dagang Hijau (IDH), is one of the international donors supporting forest certification implementation in the tropics. It has become one of the biggest forest certification facilitators by supporting producers and mobilising markets, securing sustainable sources including wood products. In Indonesia, it has supported many companies in achieving certification in collaboration with The Borneo Initiative (TBI) as the implementing agency. By 2016, the programme had contributed to doubling the FSC-certified area from 1.5 to nearly 3 million hectares.

Looking at a broader view, despite the fact that support has been given to enable companies to implement sustainable forest management (SFM) standards like the Forest Stewardship Council (FSC) certification, the challenges faced by each company after certification that can lead to certificate termination may differ. For example, PT Kandelia Alam (KLIA) and PT Bina Ovivipari Semesta (BIOS) both implemented a simplified certification procedure (group certification). These companies are two of the participants in the WWF Global Forest Trade and Network (GFTN) programme and were the first concessionaires to join the FSC group certification programme at the corporate level in Indonesia. The GFTN initiative aims to mainstream and form a developing market for environmentally and socially responsible forest products (WWF, 2017). Meanwhile, FSC group certification was designed to reduce the cost of certification (FSC, 2018). Unfortunately, despite these supporting factors, FSC certification status was suspended for both companies in 2018.

While FSC certification brings with it the hope to restore the forestry business in natural forest concessionaires towards a more promising future, the benefits at forest levels remain little examined, especially in Indonesia. At the same time, the growth of the number of certification holders since the past few years shows a strong interest from the natural forest concessionaires to commit to sustainable business practices. FSC certification standard for plantation is only applicable for plantations that were established on land that was natural forests as of November 1994. Meanwhile, most of Indonesian plantation forests were

established after 1994, hence, most of the FSC-certified forests are natural forest concessions. Regardless of the fact that FSC-certified forests in Indonesia are small in number due to this cut-off date issue, impacts on such conservation initiatives are worth investigating in order to give a background of the importance of engaging in voluntary certification and securing more sustainable natural forest resources in Indonesia. In addition, SFM through a certification scheme that continues to evolve has stimulated demand for updated information that can be used as a reference by the business sectors to measure the extent to which the FSC certification has been successful in Indonesia. This research, therefore, intends to explore the impact of FSC certification, starting by understanding the general natural forest management issues which FSC certification addressed, assessing its impacts in terms of costs and advantages from the implementer's view, as well as having a deeper look at a case in natural mangrove forests under group certification.

## 1.2. Purpose of the study

This study attempts to review the impacts of FSC certification at the macro level for the natural forest concessions that gained support from a donor institution, namely IDH and TBI. The experiences of 23 companies are assessed by employing audit reports, surveys and key informant interviews. In addition, a particular examination is conducted for PT KLIA and PT BIOS, companies that experienced similar paths towards FSC certification. Specifically, the objectives of this study are to:

1. understand the common problems faced by the natural forest concessionaires prior to FSC certification in Indonesia
2. review the impacts concerning the cost, advantages, disadvantages and challenges of FSC certification for Forest Management Enterprises (FMEs) within IDH and TBI support in Indonesia
3. provide a perspective on FSC certification impacts and the causes of suspension using a case study of PT KLIA and PT BIOS implementing group certification and operating in natural mangrove concessions in West Kalimantan.

### 1.3. Specific research questions

Nine research questions were addressed by this review to achieve the research objectives above:

- a) *What are the common problems in managing the natural forest concessions in Indonesia?*
- b) *What factors influence the number of problems in the certification process?*
- c) *What are the motivations for certification of these companies?*
- d) *What is the implication of the certification cost to the companies?*
- e) *What are the certification advantages and disadvantages for companies?*
- f) *What are the challenges faced by the companies in pre- and post-certification?*
- g) *How was the certification process carried out by these companies under group certification?*
- h) *What are the factors in the suspension of certification?*
- i) *What are the impacts of FSC certification to KLIA and BIOS?*

### 1.4. Significance of the study

Much research has reviewed the impact of FSC certification, especially in the case of developed nations where FSC was considered most successful, but has been limited in the case of tropical countries, including Indonesia. While previous researchers have assessed the impacts of the national mandatory certification standards including PHPL and Indonesia TLAS (Maryudi, Kurniawan, Sasmoko, Andayani, and Murdawa, 2017; Suryandari, Djaenudin, Astana and Alviya, 2017) and FSC at the micro level (Miteva et al., 2015; Pushpendra and Sills, 2017), studies on impacts at the macro level are still limited in Indonesia. The lack of research on FSC impacts has provided inadequate information for the parties who are interested in it and its knowledge development. Therefore, this study aims to provide new insights for policymakers, private sectors and related forestry stakeholders to address the forest management issues at the concessionaire level. Furthermore, the review can be a useful reference to support the development of future harmonisation standards between voluntary and mandatory schemes in Indonesia.

In the view of the donor institution, the review can provide data to evaluate the existing certification fund programmes and measure the success of the programme in the field so that development of future follow up projects can be better and more effective. At the same time,

concessionaires can use this study to understand the advantages for a business case, the extent of the certification and its associated consequences, while providing insights to encourage more awareness of sustainable forest management. Finally, this research aims to enrich the existing literature and studies on forest certification that contribute to business development with sustainable forest management implementation in Indonesia.

### 1.5. Thesis organisation

This thesis is organised into six chapters, each providing a different focus while constructing a review on FSC certification impacts.

Chapter 1 provides a background to the study, explaining the short historical start of the voluntary scheme and current development progress in Indonesia. Furthermore, it conveys the significance of forest certification to the readers by providing some research examples illustrating the potential impacts. This chapter also provides the broad and specific goals of the study along with research questions developed to reach the goals.

Chapter 2 provides a literature review that examines the existing research related to FSC certification impacts to find the gaps in knowledge that need to be filled through this research.

Chapter 3 outlines the approach to assess the impacts of FSC certification and its justification to fit the context of the study. This emphasises the use of quantitative and qualitative methods along with the sample sizes and areas studied.

Chapter 4 presents the results of the study from document reviews, questionnaires/survey and key informant interviews. The data is also analysed in this section and statistical analysis is used where necessary. The data is presented through tables and figures highlighting the major results in each topic discussed. Narrative analysis is also used in this section to address research objective 3.

Chapter 5 is the discussion section in which the results are presented along with interpretations and interrelations, as well as a contextual framing with other related studies. The focus is on economic, social and environmental aspects at the macro level, driven both directly and indirectly by certification.

Chapter 6 concludes the overall review of the impacts generated from the findings of the research. This part also presents some recommendations for related stakeholders and directions for future possible research topics.

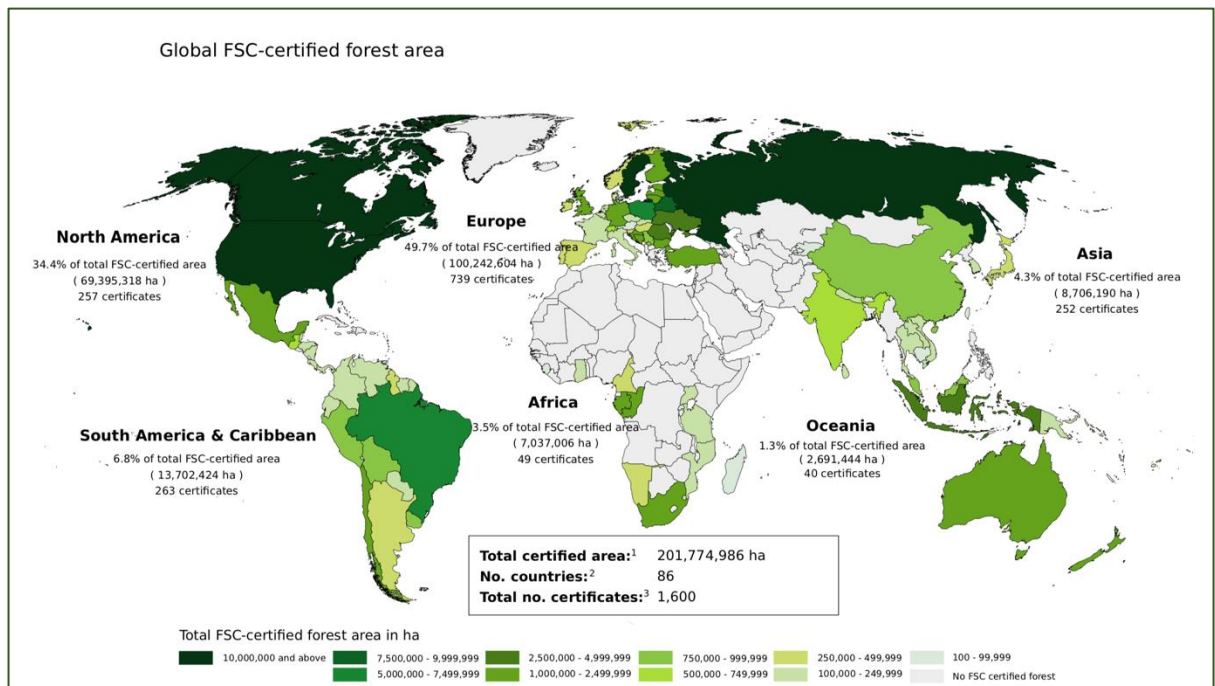
## CHAPTER 2

### LITERATURE REVIEW

#### 2.1. FSC (Forest Stewardship Council)

The FSC standard adheres to ten rules for responsible forest management, complemented by criteria and indicators that the forest management unit needs to comply with (a summary of the FSC standard can be found in Annex 1). FSC provides two types of certification that apply either to forest owners or forest product traders (FSC, 2018):

- a) Forest Management (FM) certification for forest owners to guarantee that the process and operation are sustainable according to FSC standards
- b) Chain of Custody (CoC) certification, aimed at businesses such as manufacturing or forest products traders, to verify that products are handled correctly at every stage of production, that is, from forest to shelf.



*Figure 1. Global FSC-certified forests at October 2018 (FSC, 2018)*

It is ironic that most of the successful FSC certification has occurred in developed countries, while certification was initially created to halt the deforestation and degradation happening in tropical countries (Teitelbaum & Wyatt, 2013). Despite participation having generally increased over the years, FSC only certified 5% of the world's forested area in 2014



(Sargent, 2014). In that year, the FSC-certified area was approximately 184 million ha (FSC, 2014). The number of certified forests continues to increase, and today FSC have certified approximately 201 million hectares of forest across 86 countries worldwide (FSC, 2018).

Forest owners pursuing FSC certification are required to follow various steps of certification and its maintenance. Romero et al. (2015) explained the key steps and decisions to obtain FSC certification (Figure 2). The auditors will report all conditions of the FMU regarding compliance with the set standards. Non-conformity will be listed, and actions demanded in a Corrective Action Request (CAR). This information is explained in the public summary report while describing all forest management aspects that need to be addressed to become certified. The regulatory certification scheme (that includes the monitoring audits) makes sure that FMUs must improve their management of these CARs to obtain and retain certification (Spilsbury, 2005).

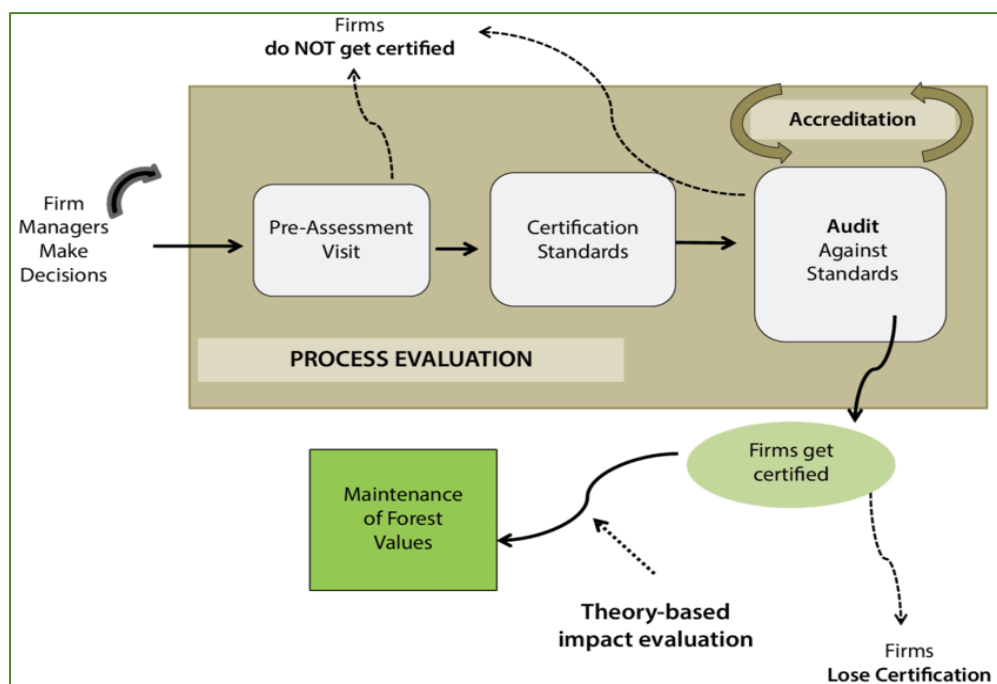


Figure 2. Key steps and decisions related to FSC certification (Romero et al., 2015)

## 2.2. The extent of FSC certification in Indonesia

Indonesia is one of the countries with slow development of FSC certification compared with other tropical countries. Assessment by Ruslandi (2015) about the number of natural forest concessions in Indonesia engaged in FSC found that the increase was very slow. There was a significant gap between concessions that were FSC-certified and those that never certified (Figure 3). Nevertheless, the size of the FSC-certified area and the number of forest management certificate holders rapidly increased from 2012 to 2017 (Figure 4). Romero et al. (2015) reported that the significant increase in companies engaged in FSC was attributable to the higher availability of Certification Bodies (CBs) and foreign funds.

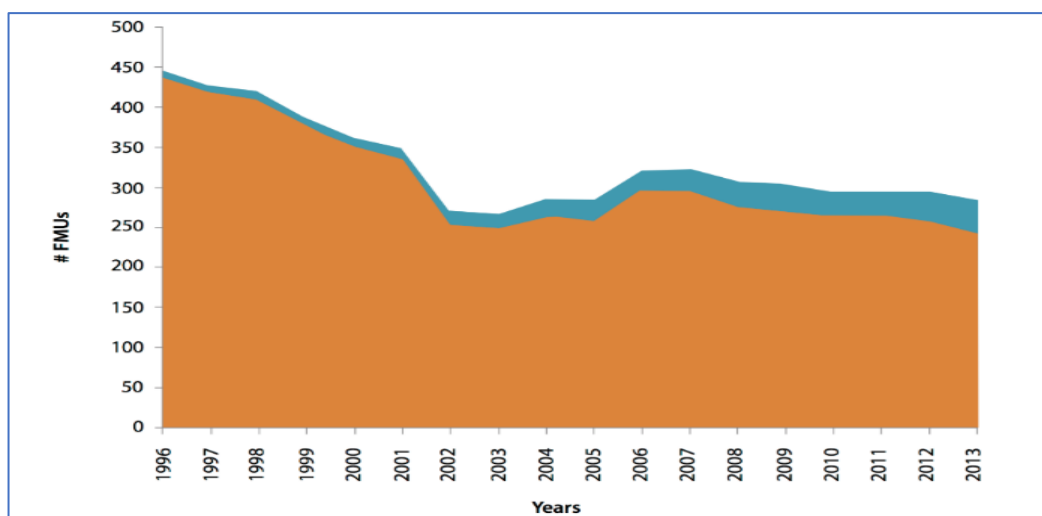


Figure 3. Active FMUs that engaged in FSC certification (blue) with those never engaged in FSC (brown) (Ruslandi, 2015)

Certification began in Indonesia in 1990 when the Perhutani (Indonesian forest enterprise) plantation was certified by SmartWood. Perhutani also became the first-ever forest certification in a developing country (Muhtaman & Prasetyo, 2006). The concern about forest certification continued to evolve until today when both mandatory and voluntary certifications exist and are achieved by many forestry companies in Indonesia. The mandatory national schemes are called the Timber Legality Assurance System (Indonesia TLAS) and Sustainable Production Forest Management (SPFM, or *PHPL* in Indonesian). Meanwhile, international voluntary schemes like the Forest Stewardship Council (FSC) and the Indonesian Forest Certification Cooperation (IFCC) have already certified millions of hectares of Indonesian forest. Indonesia has reached nearly 3 million hectares for FSC certification (FSC, 2018), and almost 4 million hectares of forest have been certified by IFCC (PEFC, 2018). Nevertheless, FSC is the oldest voluntary certification standard in Indonesia and is granted mostly for natural forest concessions. It is also the certification scheme most well supported by international civil society organisations,

as well as that most often applied for in the tropics (Atyi & Simula, 2002). Moreover, it was also preferred over IFCC by most of the logging companies in Indonesia due to its market demand, although the standard was believed to be more complicated (Pratiwi et al., 2015).

According to FSC website data in 2018, the numbers of valid, terminated and suspended FSC-FM certificates were 36, 23, and 2 respectively for the forest management scheme in Indonesia (FSC, 2018). In general, the total number of those with terminated and suspended certificate status is quite significant for the forest management scheme. At the same time, research on companies that failed to maintain the certification remains limited, including for those in Indonesia.

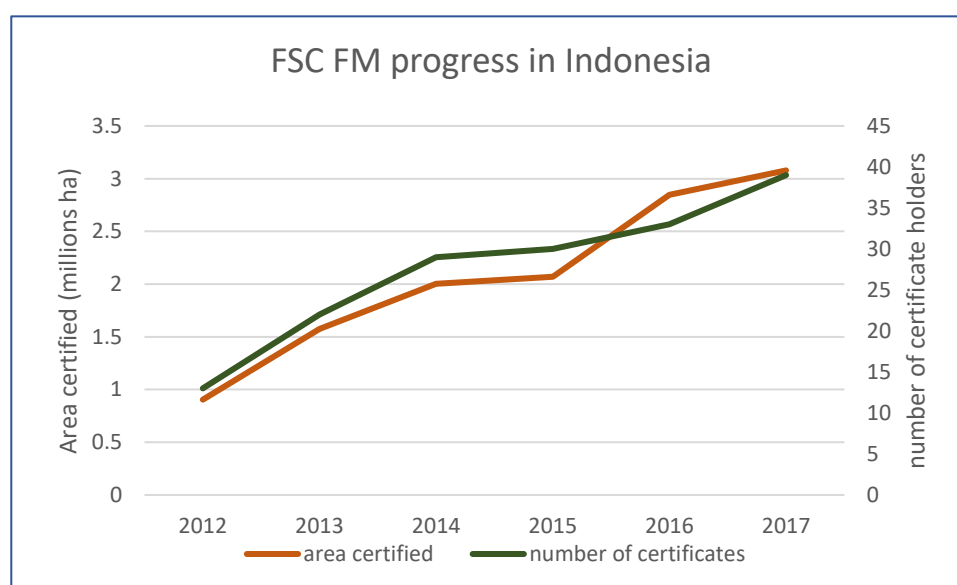


Figure 4. FSC progress in Indonesia

### 2.3. Reasons for FSC certification

Sargent (2014) explained that the global factors for FSC certification, among others, were the increase in social pressures to act in an environmentally responsible manner, conservation initiatives, the number of forest products exported to North America and Europe, and forest loss and conversion both in the tropics and temperate countries. Along with these drivers, the companies also have their own reasons for engagement with certification. The motivation for FSC certification can vary, as identified by previous researchers. In Russia, a survey of both certified and noncertified companies revealed that economic factors (e.g., economic benefits, market demands) were among the main drivers of the initiation of forest certification including FSC (Trishkin, Lopatin, & Karjalainen, 2014). However, in Brazil, the market incentives did not play an important role in the decision taken by forestry companies for certification, but was

more a result of the signalling and learning benefits that led to better and more transparent forest management (Araujo, Kant , & Couto, 2009). In Japan, forestry enterprises went for FSC certification due to the third-party sustainable forest management standard, its appeal to the outside, good branding image, and promising profits (Sugiura & Oki, 2018). This research also found that the rate of renewal intention for FSC was as high as 77%, showing the strong desire to use FSC. In Romania, forest district managers considered that economic and competitive advantages were the most important reason to adopt FSC certification (Halalisan, Abrudan, & Popa, 2018).

Muhtamman and Prasetyo (2006) have identified two driving forces of certification in Indonesia: international pressure/marketplace and domestic pressure. Meanwhile, at the FMU level, Ruslandi (2015) suggested that the dominant motivation to pursue FSC certification was to obtain market benefits (limited price premiums and market access through market linking programmes promoted by various NGOs). Unfortunately, the expectations and motivations that were met after certification was granted remained unexplained in the 2015 study, especially at the forest level. Meanwhile, that information is crucial to evaluate and locate the success position of FSC in satisfying its certification holders at the forest level.

#### 2.4. Assessing the impacts of certification

There are several approaches to assess the impact of this conservation initiative, as summarised in Table 1.

Table 1. Potential approaches to assess the impact of forest certification (Romero & Tuukka, 2013)

| <i><b>METHOD</b></i>                     | <i><b>DESCRIPTION</b></i>   | <i><b>LIMITATION</b></i>   |
|--|---|--|
| Certified vs. noncertified, experimental | Randomly selected FMUs are randomly allocated to the forest certification intervention.   | There is selection bias since forest certification is a voluntary scheme. A comparison based on the experimental approach is not feasible.   |
| Quasi-experimental                       | This method requires to construct a control group (e.g., not under certification) since FMUs cannot be randomly allocated to forest certification intervention. Groups are made of FMUs that differ only in certification status but are otherwise identical. | Constructing the comparison groups are data-intensive and technically difficult including the use of matching techniques (e.g., groups of certified and noncertified FMUs will be harmonized in every factor that also affects the certification outcome), and instrumental variables (e.g., correlated variables and those easier to assess can be used to infer the impact of certification intervention). |
| Before–after                             | The method will measure and compare baseline information on key outcomes related to the certification intervention with data after certification has been achieved.   | To obtain data on all the variables before certification is granted for both treated and non-treated groups is often impossible  |
| Systematic case studies                  | Intensive analyses of certified FMUs, drawing on the history of the FMU and how the particular nature of the mechanisms and context are producing change.   | It is time-consuming and knowledge-demanding, and hence fail to address general questions to determine the effects of forest management certification in general   |
| Expert judgement                         | Process of generating knowledge on the impacts of certification, based on the synthesis of statements of people with profound knowledge of certification and the contexts where forest management occurs.   | There is possibility to fail to capture the integrated effect of certification-driven changes and interactions with contextual factors due to the complexity of the forest management nature. However, this approach is very informative.  |

Studies have employed either a single method or a combination of methods. For example, Claros, Blommerde, and Bon (2009) evaluated the effects of FSC over 213 FMUs in the tropics by making use of public reports and analysing the evolution of CARs. The study indicated that certification improved the working standards of forest management units. Ruslandi et al. (2014) employed field documentation, audit reports, and CAR analysis as well as an interview in five concessions in Kalimantan. The most evidence-based improvements recognised in these concessions were on the logging operation, biodiversity conservation, community relations, worker safety and stakeholder participation. Cubbage, Moore, Henderson, and Araujo (2009) assessed the cost and benefits towards certified forests in the Americas through interviews and email surveys. All these studies indicated that many approaches can be used to assess the impact of certification; however, it seems that mixing these approaches would give a more comprehensive and robust analysis because the qualitative insights would complement quantitative studies to identify the indirect effects of the intervention (i.e., a mixed method approach) (Romero, et al., 2013).

## 2.5. FSC certification impacts

### 2.5.1. Advantages on general forest management performance

Much research has reported that FSC certification brought positive impacts to the forests by improving the forest management system. Ruslandi et al. (2014) summarised the improvement in forest management practices as a result of FSC certification in the natural production forests in Indonesia, including the transformation of logging operations into Reduced Impact Logging (RIL) systems, implementation of a better system for biodiversity and environmental protection, more effective company–community partnerships, and provision of adequate health and safety facilities. Other studies also considered improvements in forest management practices in order to receive certification in plantation firms in Argentina and Chile (Cubbage, Diaz, Yapura, & Dube, 2010) and North America (Moore, Cubbage, & Eicheldinger, 2012). However, the aspect in which most of the improvement occurred may vary and be associated with several factors. Furthermore, the comparison between the expected and achieved advantages remained unexplored in most of these studies.

The summary of potential certification benefits within forest management is presented in Figure 5, as discussed by Nussbaum and Simula (2005).

**Economic Benefits**

Improved performance standards

Enhanced control of resources

Improved management systems, including internal mechanisms of planning, monitoring, evaluation, and reporting

Reduced regulatory control

Permanent economic viability and opening of new markets

Improved market access and occasional higher prices

Improved enterprise image and business practice

**Social Benefits**

Addressing the public's environmental and social concerns about forest management

Balancing the objectives of forest owners, other stakeholders, and society

Empowering the poor and less favoured

Poverty alleviation

Community participation

Improved workers' rights and living conditions

**Environmental Benefits**

Environmental conservation

Maintenance and enhancement of biodiversity

Maintenance and enhancement of high conservation value forests

*Figure 5. Potential certification benefits (Nussbaum & Simula, 2005)*

### 2.5.2. Economic, social and environmental advantages of FSC certification

The three main economic benefits of certification are market access, improved public image, and price premium (Chen et al., 2010). The economic benefits (e.g., a price premium) also become the most expected benefits for companies and forestry stakeholders in Indonesia (Pratiwi et al. 2015; Ruslandi et al., 2014). Researchers have reported a variety of price premium ranges including 5%–51% for exported certified products (e.g., bench and boards) in Bolivia (Nebel, Quevedo, Jacobsen, & Helles, 2005) and 5%–77% (for exported logs) in Sabah Malaysia (Kollert & Lagan, 2007). Kollert and Lagan (2007) concluded that price premiums were achieved to some extent depending on the type of traded species, sales, and marketing

procedures. In Indonesia, Ruslandi (2015) reported that in 2006–2007, there was a 50% price premium for Bangkirai logs in the domestic market. In addition, in his earlier study in five natural forest concessions, he found that some concessions received 10%–15% green premium for furniture sent to Europe and 2%–4% of premium price for plywood (Ruslandi et al., 2014). Meanwhile, an interview with Musthofa as the natural forest concession ex-manager (June 12, 2018) also suggested that a price premium might not happen in recent years due to the development of the market, but in the past (around 2008 to 2012), there was a likelihood of obtaining a 30% premium in the price for logs in Indonesia. It seems that there is a lack of updated information and studies about price premiums for logs in Indonesia.

The FSC standard facilitates and recognises the social values that are affected by forest management. An assessment in Cameroon conducted by Tsanga, Lescuyer, and Cerutti (2014) showed that FSC certification played a key role in the development of the multi-stakeholder platform that functions as a mechanism of improved “social exchange”. It diminishes conflict between logging companies and local communities to some extent. The social impacts of FSC certification were also evaluated by Miteva et al. (2015) in Kalimantan by comparing villages in certified and noncertified logging companies. The study found that certification in Kalimantan generated benefits for the local communities, such as reduced disease incidence and fuelwood dependence, and increased private funding. However, both studies focused on the external social aspect (relationship between company and surrounding community), and there was limited exploration of the effects on internal social aspects (relationship between company and staff). The internal social aspect is critical because it was one of the most common problems found in developing countries before certification, as reported by Claros et al. (2009).

Many studies explained the indirect benefits of certification to the environment, for instance, that FSC-certified forests had lower emissions from their logging activities after implementing RIL (Griscom, Ellis, & Putz, 2014), a reduction in deforestation by 5% and air pollution by 31% (Miteva et al., 2015), and increased species densities compared with noncertified areas (Poulsen & Clark, 2010). While the impacts at the micro level in these studies are indeed interesting, assessing the impacts at macro level is also important to understand the complete picture of the effects of certification. Hence this study aims to complement the existing micro level studies concerning FSC certification.



### 2.5.3. Cost of certification

The cost and benefits of certification have been the principal issues, especially for business operations. The certification costs include both direct and indirect costs as shown in Figure 6. Certification cost was affected by many factors such as the company size, facilities, locations and the nature of forest management (Aguilar & Vlosky, 2007). In Indonesia, certification costs generally declined with concession size because of size-independent fixed costs (Ruslandi et al., 2014). In America, the cost for FSC-US certification was also reported to be rapidly decreasing with increasing tract size. This was associated with some of the cost items being spread over a larger area (Cubbage et al., 2009).

Many researchers have studied the cost of implementing FSC certification in various countries. Simula, Astana, Ishmael, Santana and Schmidt (2004) found that the certification cost in the tropics (Brazil, Malaysia, and Indonesia) ranged from US\$3 to US\$32/ha. In Bolivia, the direct cost of certification was around US\$0.18/ha (Nebel et al., 2005). In a more recent study, Ruslandi et al. (2014) suggested that the average cost of certification was US\$4.76/ha for five natural concessions in Kalimantan, Indonesia. Unfortunately, the sample of participating FMUs in this research seems to be too small. In the early 2010s, the certification cost required for natural concessions in Indonesia was around US\$2/ha, after other funding received from the international donors (K. Musthofa, personal interview, June 12, 2018). On the other hand, external parties such as TBI provided US\$2–3/ha for the concessionaires to obtain certification with the expectation there would be an equal contribution for each party (company and the donor) to the total certification cost. In the TBI scheme, a maximum of US\$300,000 was allocated for large FMUs (more than 70,000 ha) and US\$150,000 was allocated for smaller enterprises (35,000–70,000 ha). Meanwhile concessionaires with areas less than 35,000 ha are encouraged to apply through a group scheme (TBI, 2013). Unfortunately, the aforementioned studies have limited explanations as to which cost item was most important towards certification. An update of the certification cost is required to know the current range of certification costs, especially with the availability of donor funding, and to attract more FMEs to pursue FSC. In addition, a comparison of the costs from the company with the donor funding is also required to understand the estimated costs from both donor and companies.

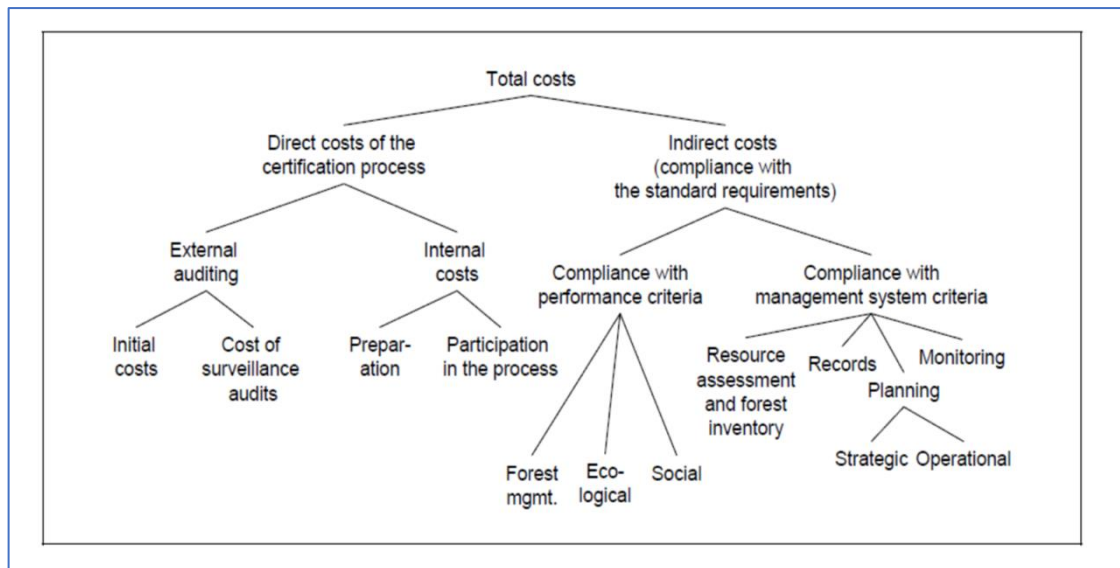


Figure 6. Cost of certification according to Simula et al. (2004)

#### 2.5.4. Challenges and disadvantages of certification

To obtain voluntary certification for forests in the tropics is clearly not an easy task, primarily due to the challenges faced by the companies. Bleaney et al. (2010) discussed the challenges of implementing certification in Indonesia from a practitioner view. He addressed five main difficulties towards forest certification and retaining FMU commitment. He explained that keeping standards realistic, a lack of auditing capacity, and the expanding demand for the certification as well as multiple certification programmes may become the challenges that make the rise of certification in Indonesia slow. In a more global view, a study by Durst et al. (2006) identified that the challenges faced by developing countries were the lack of market demand, gaps in existing management, lack of capacity, high cost and low law enforcement. Similarly, a more recent study in five natural concessions in Kalimantan by Ruslandi et al. (2014) also suggested similar barriers were still being faced by companies to gain forest certification. Gale (2006) identified barriers to certification at three different levels – firm, national and regional Asia Pacific. The study suggested that the three main barriers at the firm level are (1) the required cost towards certification, (2) the complexity of the certification system, and (3) the scale of companies. These components, however, are interrelated. At the national level, FSC implementation has confronted a set of powerful actors that expected otherwise, for example, the rejection by business and government in the Solomon Islands, and the development of the local standard in Indonesia and Malaysia. At the regional level, barriers such as lower demand for certified products were impeding the implementation of FSC.

It seems that there is limited research about certification challenges in Indonesia with detailed forest management aspects. In addition, most of the research has not shown how the supporting factors (e.g., the presence of international donors and positive development of certification schemes such as an FSC group scheme) contribute to eliminating or minimising these challenges and barriers.

Certification did not always bring positive impacts, and some of the disadvantages were also reported by previous researchers. Time, preparation and audit costs were among other disadvantages considered by one of the largest timber management organisations in the United States (Schreiber, 2012). The high cost for assessment was also reported as one of the main areas of dissatisfaction by FSC-certified companies in Japan (Sugiura & Oki, 2018). Unfortunately, there is limited research on FSC certification impacts that addressed the disadvantages caused by FSC certification in Indonesia; hence this study aims to understand this aspect.

## 2.6. Group certification

Group certification is one of the FSC certification schemes that enable small-forest owners to share certification costs. Group managers play a significant role in this certification scheme because they have the responsibility of checking the compliance of the group members with the FSC standards (FSC, 2016). The relationship between group managers, members, and certification body is explained in Figure 7.

In Indonesia, the group certification scheme was applied mostly for community forests. Research by Harada and Wiyono (2014) suggested that the successful factors in group certification were strong social institutions for managing the certified forests and the strategy in maintaining the link between producers and consumers. The role of the third party that linked the local people with the international markets was the key factor identified in that study. In Vietnam, a study on a group of tree growers applying for a group certification scheme identified that the threats to group certification were the lack of donor support, price fluctuation and a group member's withdrawal. In addition, some weaknesses were the high cost of audits, the complicated management and monitoring process as well as the low level of expertise. However, the study also found that the group certification created opportunities to participate in wider trade networks, obtaining higher prices (Hoang, Hoshino, & Hashimoto, 2014). This study was also an instance of planters under WWF linking trade demand and the sustainable

forest management programme. Unfortunately, it seems that most of the current studies on group certification were limited to community forests, and the case for group certification at the corporate level is still rare.

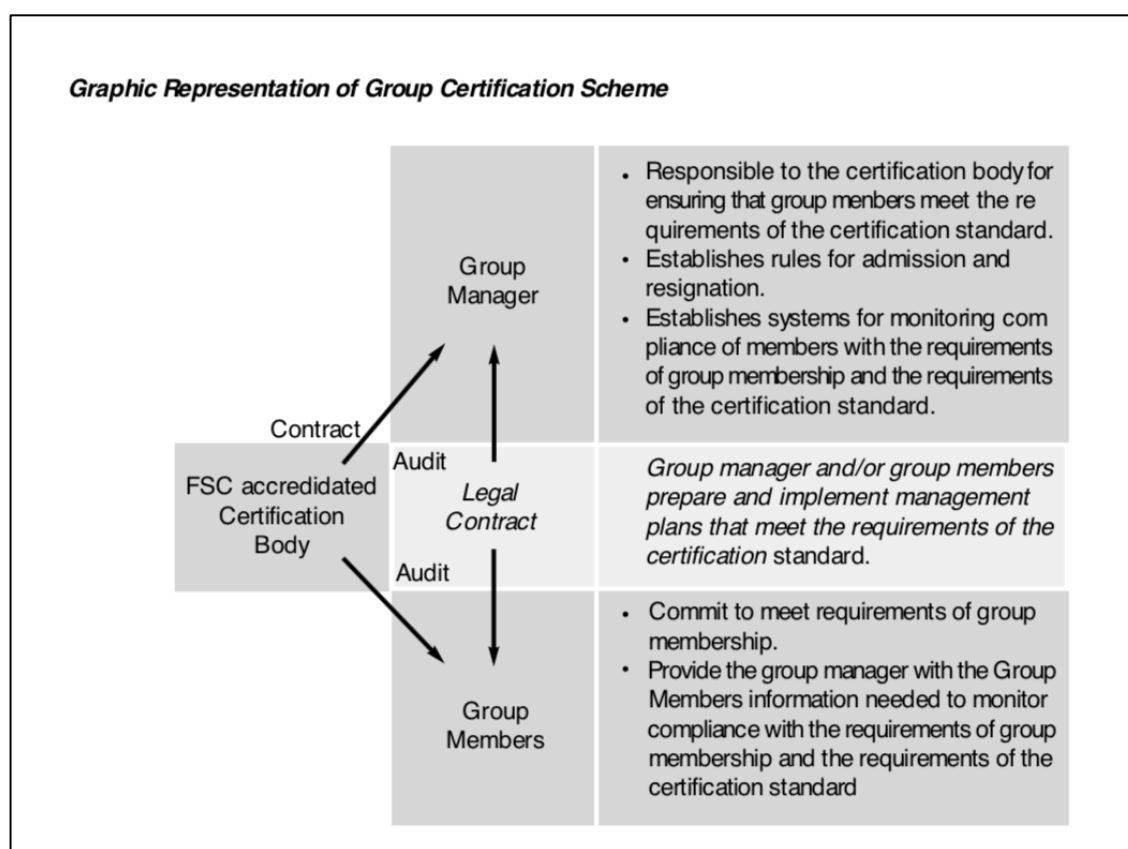


Figure 7. Relationship between actors in the group certification scheme. Source (WWF, n.d.)

## 2.7. Mangrove forests in Indonesia

Indonesia has the largest mangrove ecosystem in the world, representing 15% to 23% of total global mangroves (Darmawan, et al., 2014). The potential value of mangroves has been assessed through numerous studies. Mangroves can provide livelihood through harvesting of shrimp, eel, clam, crab, sea snail and a range of fish species. The wood from mangrove can be used for firewood and construction materials (Armitage, 2002). In the business sector, mangrove wood is used as the material for pulp and papers, and for charcoal at both small and large scales, contributing to individual livelihoods and national exports (Evans, 2015). The total economic value of mangrove in Indonesia was estimated as ranging from US\$3,625 to US\$26,735/ha/year (Rizal, Sahidin, & Herawati, 2018). Mangroves also have environmental significance including supporting neighbouring ecosystems (coral reefs, seagrass beds, mud and sand flats) and acting as a crucial defence against coastal erosion (UNEP, 2014). There are

some advantages in mangrove forest management including the absorption of more employees than terrestrial forests since it operates with manual harvesting, less social pressure due to its natural condition (muddy and not convertible to agriculture), and its high regeneration capabilities (Mulia & Sumardjani, 2001).

Reviewing related studies on certified mangrove forest becomes challenging because KLIA and BIOS seemed to be the first mangrove certified forest in Indonesia, even in the world. Nevertheless, some mangrove-related research has been carried out focusing on West Kalimantan. For instance, Prasetiamartati, Sheng, Santoso, Mustikasari and Syah (2008) suggested that the relatively good condition of mangrove forests in this area was because of the charcoal production that prevented the conversion of mangrove into alternative uses. On the other hand, these activities were considered a threat because most of the sources were from legal exploitation in the protected forests (Ritabulan, 2016). This study will use the results of previous research to support the analysis in addressing the related research objectives, especially for the case study in KLIA and BIOS.

## CHAPTER 3

### METHODS

#### 3.1. Approach

Direct evaluation of certification impacts requires a complete ground-level assessment (of social, biological and economic aspects) by comparing certified and noncertified companies that were selected randomly from their respective populations. Unfortunately, this method was considered difficult and costly (Cubbage et al., 2010). Taking into account both time and budget constraints therefore, this study used indirect ways to assess the certification impacts. This research used three different approaches to address each research objective combining both quantitative and qualitative analysis. In general, the methods used, based on secondary data and stakeholder perception, have been a common approach used to evaluate the certification impacts in the FMUs.

##### 3.1.1. Review of Corrective Action Requests (CARs)

Using the information of CARs in the audit report issued by the certification body has been one of the common approaches employed by many researchers examining certification impacts. The initial CARs can be used to understand how far the ongoing FMU management is different from that required by a particular certification scheme (Romero & Tuukka, 2013). Analysing the CARs enables researchers to understand what aspects demand changes or improvement against a list of FSC standards. With the basic assumption that these identified CARs were solved by FMUs to obtain certification, the evaluation of CARs was considered an indirect way to measure certification impacts at the forest level (Newsom, Bahn, & Cashore, 2006). In this present study, the method was used to examine the forest management problems addressed by FSC certification.

##### 3.1.2. Questionnaires and interviews

Questionnaires and interviews are also one of the indirect ways used to assess the impacts because they collect impressions from representatives of stakeholders involved in the certification process; FMUs, government officials, timber industries, local communities,

environmental groups and buyers (Romero, et al., 2013). The questionnaires were set for 23 FMUs that passed FSC certification under the support of IDH and TBI, with the aim to evaluate the certification impacts perceived internally by the certification holders. Various studies have employed questionnaires and semi-structured interview to assess the impact of certification in many parts of the world, including Moore et al. (2012), Hartsfield and Ostermeier (2003), and Ruslandi et al. (2014).

The interview played a role in tandem with the questionnaires and used the topics in the questionnaires as the main guideline. This method was also used as a backup in case the representative of the FMUs preferred a face-to-face interview rather than distance questionnaires.

### 3.1.3. Fieldwork

Fieldwork was undertaken to obtain data to examine the case study in KLIA and BIOS. The fieldwork activities included site observations, key informant interviews (related staff and stakeholders), and document reviews (from preparation to the second surveillance audits). In this activity, the expert judgement and before–after approaches were combined to address research objective 3. A summary of these approaches assigned for different research objectives is presented in Table 2.

## 3.2. Data collection

### 3.2.1. Location and site description

IDH the Sustainable Trade Initiative and its affiliation in Indonesia, Yayasan Inisiatif Dagang Hijau, was one of the biggest development agencies supporting sustainable trade through forest certification in Indonesia. IDH has run its programme in the tropics since 2008 and achieved 8 million certified forests by early 2016. In Indonesia, they collaborated with TBI as the implementing agency and the total programme coverage was 3.07 million hectares in 2017. The programme facilitated 32 concessionaires across Indonesia of which 23 were certified forest management schemes for natural forests (in 2018, they represented more than 50% of the total FSC-FM for natural forest certification holders in Indonesia). Two companies are natural mangrove concessionaires under the group certification programme, namely PT Kandelial Alam (KLIA) and PT Bina Ovivipari Semesta (BIOS). The status of FSC certification

in this group certification is now suspended. In 2018, IDH no longer supported the certification programme but TBI still play a role as implementing agency promoting certification in Indonesia.

*Table 2. Summary of approach and its associated research questions*

| No | Research Objective   | Research Questions  | Approach                  | Data collection   | Analysis     |
|----|--|---|---------------------------|---|--------------|
| 1  | Understand the common problems faced by the natural forest concessionaires prior to FSC certification in Indonesia   | <i>a) What are the common problems in managing the natural forest concessions in Indonesia?</i><br><i>b) What factors influence the number of problems in the certification process?</i>  | CAR review                | Public summary reports  | Quantitative |
| 2  | Review the FSC certification impacts concerning the cost, advantages, disadvantages and challenges for FMEs within IDH and TBI support in Indonesia  | <i>a) What are the motivations for certification of these companies?</i><br><i>b) What is the implication of the certification cost to the companies?</i><br><i>c) What are the certification advantages and disadvantages for companies?</i><br><i>d) What are the challenges faced by the companies in pre- and post-certification?</i> | Questionnaires/ interview | Open-ended questionnaires and semi-structured interview       | Quantitative |
| 3  | Provide a perspective on certification impacts and the suspension causes using a case study of PT KLIA and PT BIOS implementing the group certification and operating in natural mangrove concessions in West Kalimantan | <i>j) How was the certification process carried out by these companies under group certification?</i><br><i>k) What are the factors in the suspension of certification?</i><br><i>l) What are the impacts of certification to KLIA and BIOS?</i>  | Field work/ case study    | Field observation, key informant interviews, document reviews | Qualitative  |

PT Kandelia Alam, known as KLIA Mangrove, is the company holding a natural forest concession licence and located in Batu Ampar sub-district, West Kalimantan province. It is a forestry company that plants mangrove trees (*Rhizophora apiculate* and *Bruguera spp*) and supplies roundwood for industrial materials such as pulp, paper, charcoal and wood pellets. The company officially operated in 2009 with a licence valid until 2053 to manage 18,130 hectares of mangrove forests. It was awarded a PHPL certificate in 2014 with a good grade and FSC-FM in 2015.



PT Bina Ovivipari Semesta (BIOS) is also a natural forest concessionaire located in Batu Ampar sub-district, West Kalimantan province, managing 10,100 hectares of mangroves and has a charcoal factory. The main commodities are mangrove trees (*Rhizophora apiculate* and *Bruguera spp*) to supply for chips and charcoal production. It was established in 2000, and its licence is valid until 2052. In 2015 the company had a PHPL certificate with a good grade and FSC-FM along with PT KLIA under the group certification scheme.

### 3.2.2 Data collection

There were two stages of data collection including primary and secondary data. The interviewed participants were selected by a purposive sampling method. Steps used in the data collection are shown in Figure 8.

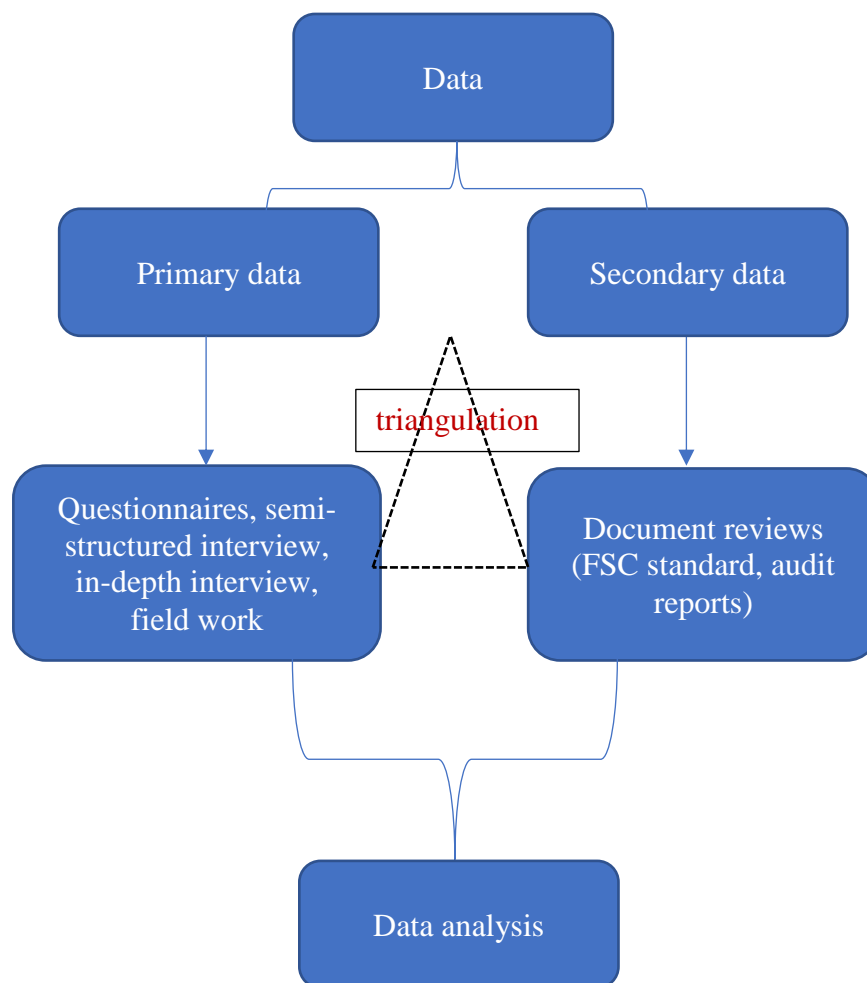


Figure 8. Data collection steps

### 3.3. Data analysis

#### 3.3.1. CAR review

Public summaries in the main FSC assessment from 23 companies were downloaded from the FSC website regardless of the certification body. CARs (both from major and minor findings) of each FMU at the criteria level were collected and counted where major and minor findings were assumed to be the same and weighted as one regardless of their quantity. Hence, if there were a criterion having both major and minor non-compliance indicators, the value would remain at level 1. Observation findings were excluded because they did not require remedial actions. The frequency rate according to the number of FMUs and the total CARs were counted to identify the most common problems of forest management prior to FSC certification. The number of CARs was also associated with the size of FMU and year of certification using an ANOVA test.

Each CAR was then categorised in each of the aspects of sustainability (environmental, economic and social). Criteria with more than one possible sustainability aspect were assigned to the “all pillar” category. The total CARs in this category were later distributed equally to each initial sustainability pillar. The classification of each criterion to a sustainability aspect is provided in Annex 1.

#### 3.3.2. Questionnaires and interviews

The questionnaires were developed to cover some topics related to the effects of certification (e.g., motivation, costs, advantages, disadvantages and challenges). The questionnaires were produced by referring to previous related studies and by consultation with related experts. The questions were designed to obtain systematic and comparable results using scale answers indicating perception from low to high (Figure 9). Examples of the questionnaires can be found in Annex 2.

The questionnaires were sent to those 23 FMEs following up an official email that had been previously sent by the Indonesian concessionaires association (namely APhi) from 22 May to 31 May 2018. At the same time, the researcher contacted the FMU representatives through WhatsApp to monitor the progress of questionnaires. In some cases, the questionnaires were in tandem with face-to-face interview. The interview was carried out whenever possible and guided by the questions in the questionnaire. The last filled questionnaire was received on 23

July 2018. At the end, 16 filled questionnaires were gathered, of which seven were through direct interview. Data were then tabulated and presented in graphs and tables. In some cases, a statistical analysis was carried out to seek the relationship between variables (e.g., ANOVA and chi-square tests).

| Choice options     | Value in database |
|--------------------|-------------------|
| Not found          | 0                 |
| Not important      | 1                 |
| Somewhat important | 2                 |
| Neutral            | 3                 |
| Important          | 4                 |
| Very important     | 5                 |

*Figure 9. Qualitative to quantitative coding*

### 3.3.3. Fieldwork

The fieldwork was focused on the case study in KLIA and BIOS. A five-day trip was carried out to observe and cross-check the real conditions in the field from 14 to 18 May 2018. Three-step data collection was done for this case study to enable data triangulation. First, a series of available audit reports and online sources (publications and news) were reviewed to gain the background and preliminary data of the companies. Secondly, observations were carried out on both companies along with the related interviews with staff in the field. Some notes and photos were also taken (as provided in Annex 3). Finally, stakeholders involved in the certification of those companies were interviewed either in face-to face-meetings or through a phone call. The list of interviewed stakeholders is given in Table 3.

Due to the change in the APCS internal team, the researcher interviewed the ex-APCS group certification manager representing the group manager. The information about the group manager was also enriched from the interview with the TBI programme manager, as he is a former APCS program director.

An interview protocol was used, beginning with an introduction from the researcher. The introduction consisted of the explanation of the study and its rationale to the selected informants, and how the interview would be carried out. The researcher also asked for the informant's permission to record the conversation and take notes. A probing technique

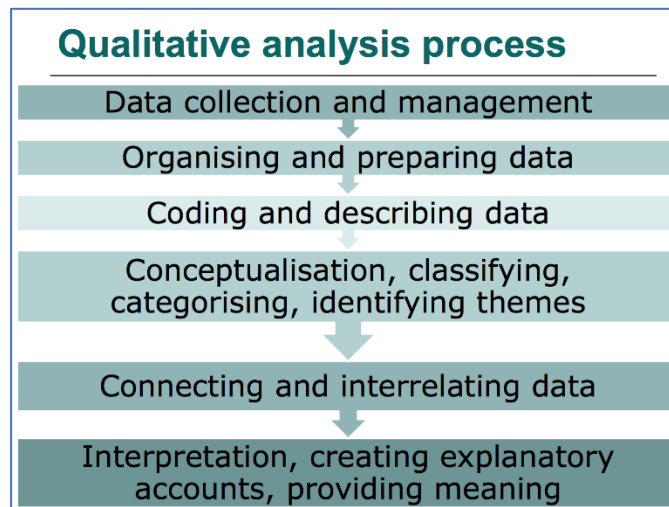
(clarification and repetition of answers and questions) was also used to obtain complete, clear, relevant and consistent responses (Kumar, 2011).

*Table 3. Interviewed related stakeholders*

| No | Stakeholders       | Role  | Interviewed              |
|----|--------------------|---|--------------------------|
| 1  | IDH                | Funding agency  | yes                      |
| 2  | TBI                | Implementing agency   | yes                      |
| 3  | WWF GFTN           | Coaching organisation   | yes*                     |
| 4  | APCS               | Certification manager   | yes*                     |
| 5  | APHI               | Concessionaires association   | yes                      |
| 6  | FSC Indonesia      | FSC representative  | yes                      |
| 7  | TFT                | Coaching organisation   | yes                      |
| 8  | Certification Body | FSC-FM Auditor  | yes*                     |
| 9  | PT KLIA            | Operational director<br>Production manager<br>Environmental manager<br>Social manager | yes<br>yes<br>yes<br>yes |
| 10 | PT BIOS            | Operational director<br>Production manager<br>Environmental manager<br>Social manager | yes<br>yes<br>yes<br>yes |

Note: \*, phone call interview.

Qualitative analysis was chosen to explain what has happened to KLIA and BIOS concerning the suspension status of their FSC certification. In the case of research objective 3a, a narrative style was used to explain the complete story of FSC certification in these companies, including putting the observed situations in the certification continuum. A narrative methodology allowed the researcher to investigate a specific phenomenon through gathering stories (Paiva, 2008). This method enabled the researcher to relate the chronological situations in these companies and understand the underlying aspects that directly and indirectly contributed to the termination of certification. The step-by-step process of the qualitative analysis is presented in Figure 10.



*Figure 10. Qualitative analysis method (Hoyos & Barnes, 2012)*

## CHAPTER 4

### RESULTS

#### 4.1. RO 1: To review common problems before certification

##### 4.1.1. Common problems according to public summaries

This was examined using the public summary of audit reports that is available on the FSC website. In this review, there were 205 minor and 205 major findings from all 47 mentioned criteria (Table 4). On average, each FMU had nine major findings that had to be closed soon (as a prerequisite to granting the certificate) and nine minor findings that had to be closed within a year or before the next surveillance audit. Meanwhile, total CARs (major and minor findings) were 410, and on average, each FMU had 19 non-conformances with FSC criteria. Findings were later ranked according to their frequencies. All findings with more than a 50% distribution rate are presented in Table 5.

*Table 4. Findings summary*

| No | Findings                      | Total | average |
|----|-------------------------------|-------|---------|
| 1  | Major                         | 205   | 9       |
| 2  | Minor                         | 205   | 9       |
| 3  | CARs (minor + major findings) | 410   | 19      |
| 4  | Observations                  | 70    | 3       |

The most common problem was related to criterion 4.2 which applied to 86.4% of FMUs and accounted for 4.74% of CARs. Criterion 4.2, according to the FSC national standard for Indonesia, is about the compliance of forest management to all applicable laws and/or regulations regarding health and safety for employees and their families. For instance, the inconsistent use of health and safety equipment or implementation of the SOP were deemed unsafe. In some cases, no record of training and contradicting statements between the management representative and workers during the interview were the evidence of non-compliance with the FSC standard in the field.

Table 5. Distribution of mentioned criteria from main FSC audit

| Reference principle                                    | no  | Reference criteria  | CARs | Distribution from total FMU | Distribution from total CARs |
|--|-----|---|------|-----------------------------|------------------------------|
| <b>4. Community relation and worker's rights</b>       | 4.2 | health and safety for employees & families  | 19   | 86.4%                       | 4.6%                         |
| <b>6. Environmental impacts</b>                        | 6.5 | reduce impact logging operations  | 18   | 81.8%                       | 4.4%                         |
| <b>6. Environmental impacts</b>                        | 6.2 | RTE species   | 15   | 68.2%                       | 3.7%                         |
| <b>8. Monitoring and assessment</b>                    | 8.1 | frequency, reference, and replicability   | 15   | 68.2%                       | 3.7%                         |
| <b>8. Monitoring and assessment</b>                    | 8.5 | public summary  | 15   | 68.2%                       | 3.7%                         |
| <b>9. Maintenance of High Conservation Value (HCV)</b> | 9.1 | define existence  | 15   | 68.2%                       | 3.7%                         |
| <b>1. Compliance with laws and FSC principles</b>      | 1.5 | protection from illegal activities  | 14   | 63.6%                       | 3.4%                         |
| <b>6. Environmental impacts</b>                        | 6.7 | waste (garbage)   | 14   | 63.6%                       | 3.4%                         |
| <b>7. Management plan</b>                              | 7.3 | training of workers for implementation  | 14   | 63.6%                       | 3.4%                         |
| <b>7. Management plan</b>                              | 7.4 | public summary  | 14   | 63.6%                       | 3.4%                         |
| <b>8. Monitoring and assessment</b>                    | 8.2 | indicator: productivity, composition changes, socio-economic impacts, economical aspects of company | 14   | 63.6%                       | 3.4%                         |
| <b>4. Community relation and worker's rights</b>       | 4.1 | communities are given employment, training and services   | 13   | 59.1%                       | 3.2%                         |
| <b>9. Maintenance of HCV</b>                           | 9.3 | measures for maintenance and enhancement, public summary  | 13   | 59.1%                       | 3.2%                         |
| <b>9. Maintenance of HCV</b>                           | 9.4 | monitoring  | 13   | 59.1%                       | 3.2%                         |
| <b>7. Management plan</b>                              | 7.1 | management plan content   | 12   | 54.5%                       | 2.9%                         |

The second most mentioned criterion was related to the environmental impact principle, specifically criterion 6.5 which was about RIL operations. Some 82% of FMUs had a problem with the guideline to minimise forest damage and to protect water resources from mechanical disturbance. For example, harvesting activities still damaged the waterways or caused erosion in the forests, although appropriate guidelines were already in place in some FMUs.

Overall, there were 15 criteria that applied to more than 50% of FMUs. Three criteria related to each of environmental impacts, monitoring and assessment, HCV management, and the management plan. The remaining criteria were about community relations and workers' rights (2 criteria), as well as compliance with laws and FSC principles (1 criterion). Meanwhile,

non-conformances related to principles 3 and 5 were found in less than 50% of all reviewed public summaries.

#### 4.1.2. Common problems according to the sustainability pillars

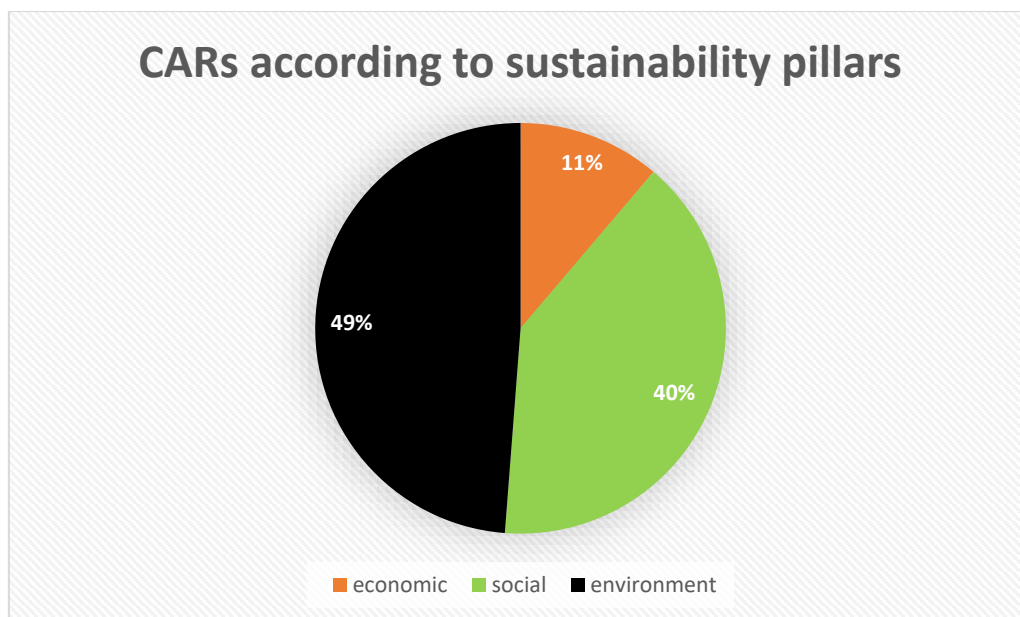
Categorisation of all criteria and indicators to the sustainability pillars (economic, social and environmental) was carried out. The classification aims to see which pillar these companies focused on when solving the problems through certification. Each criterion was assigned to a sustainability pillar; however, some of the aspects were assigned to all pillars if necessary (e.g., standards related to regulation, management, and monitoring) (criteria 1.3–1.6, 7.1, 7.2 and 8.1, 8.2, 8.4, 8.5). Criteria assigned in all pillars were later distributed equally to other three pillars (added 28 to each pillar) so that the total value was still 410 CARs. This was inspired by the analysis carried out by Claros et al. (2009) when assessing impacts of FSC, but with modification.

According to the summary categorisation provided in Table 6, there were still 410 CARs in total, and on average, each FMU had 9, 8 and 2 issues related to environmental, social and economic aspects respectively. The environmental aspect was counted as the main issue raised in the main assessment audit, occupying 49% of total issues occurring in all 23 reviewed companies. At the same time, social and economic problems accounted for only 40% and 11% of the total indicated findings (Figure 11). This data suggests that environmental aspects were issues that forest certification mostly addressed during the main audit process. This result was also different from the aforementioned public summary analysis where the social element through criteria 4.2 was the most mentioned issue, according to FSC criteria.

*Table 6. CARs summary according to sustainability pillars*

| <b>Sustainability pillars</b> | <b>Initial CARs</b> | <b>CAR + all pillar distribution</b> | <b>average</b> |
|-------------------------------|---------------------|--------------------------------------|----------------|
| Social                        | 136                 | 164                                  | 8              |
| Economic                      | 18                  | 46                                   | 2              |
| Environment                   | 172                 | 200                                  | 9              |
| All pillar                    | 84                  |                                      |                |
| <b>Total</b>                  | <b>410</b>          | <b>410</b>                           | <b>19</b>      |





*Figure 11. CARs based on sustainability pillars*

#### 4.1.3. What were the factors affecting the number of issues in FMU?

Various factors can cause the number of issues found in the FSC main assessment. This research analysed whether FMU characteristics (e.g., total area) and certification year were two of those. The area was assumed to influence the complexity of management that needed to be carried in FMUs. Hence this research analysed whether the size of FMU had a significant relationship with the number of findings in the main assessment. FMUs were classified into three categories: small (< 50,000 ha), medium (50,000–100,000 ha), and large (> 100,000 ha). In this research, there were seven small, ten medium, and six large FMUs. In addition, the year during which the certificate was obtained was also included as a factor to see if there was an improvement in forest management with time. Multiple regression analysis was carried out with the assumption that both independent variables (FMU size and year of obtaining FSC certificate) had an association with the dependent variable (number of issues/CARs). Figure 12 provides the scatter plot of each variable and shows a weak relationship between the number of CARs and both predictors.

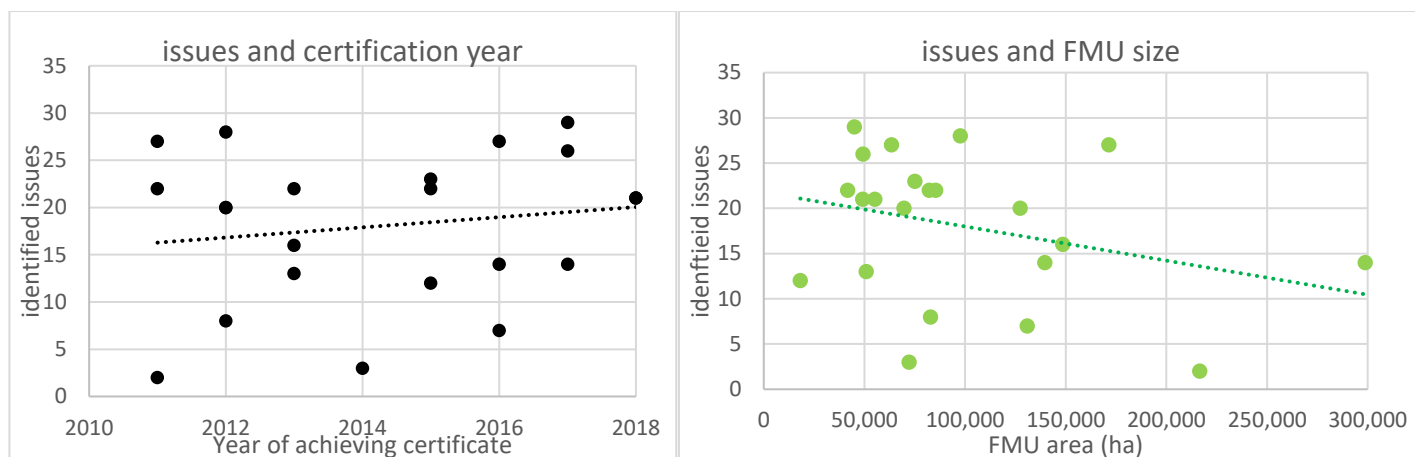


Figure 12. Scatter plot of FMU area with CARs and year of certification

The multiple regression (Table 7) indicates that only 0.4% of the variance of the dependent variable could be explained by the independent variables (adjusted R square .004). ANOVA also indicated no statistically significant findings ( $p > .05$ ,  $p = .372$ ) for all variables. Furthermore, looking into more detail on each predictor, neither FMU size nor certification year has a statistically significant impact ( $p > .05$ ) on the number of issues found in the first main assessment. The  $p$  values were .229 and .727 respectively. Multiple regression results suggest that neither the size of FMU nor the certification year affected the number of changes required to obtain FSC. It seems that the number of issues in forest management did not depend on the area of FMU nor the year of audit.

Table 7. Multiple regression results

| Model Summary   |                   |          |                   |                            |
|---|-------------------|----------|-------------------|----------------------------|
| Model   | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1   | .307 <sup>a</sup> | .094     | .004              | 7.90543                    |
| a. Predictors: (Constant), certification year, FMU size |                   |          |                   |                            |

| ANOVA <sup>a</sup>                                      |            |                |    |             |       |                   |
|---|------------|----------------|----|-------------|-------|-------------------|
| Model   |            | Sum of Squares | df | Mean Square | F     | Sig.              |
| 1   | Regression | 129.997        | 2  | 64.998      | 1.040 | .372 <sup>b</sup> |
|   | Residual   | 1249.916       | 20 | 62.496      |       |                   |
|   | Total      | 1379.913       | 22 |             |       |                   |
| a. Dependent Variable: CARs                             |            |                |    |             |       |                   |
| b. Predictors: (Constant), certification year, FMU size |            |                |    |             |       |                   |

| Coefficients <sup>a</sup>   |                    |                             |            |                           |        |      |
|-----------------------------|--------------------|-----------------------------|------------|---------------------------|--------|------|
| Model                       |                    | Unstandardised Coefficients |            | Standardised Coefficients | t      | Sig. |
|                             |                    | B                           | Std. Error | Beta                      |        |      |
| 1                           | (Constant)         | -507.984                    | 1501.637   |                           | -.338  | .739 |
|                             | FMU size           | -2.841                      | 2.290      | -.275                     | -1.241 | .229 |
|                             | Certification year | .264                        | .745       | .079                      | .354   | .727 |
| a. Dependent Variable: CARs |                    |                             |            |                           |        |      |

## 4.2. RO 2. To review the motivations, costs, advantages, challenges and disadvantages to the certification for forest concessionaires

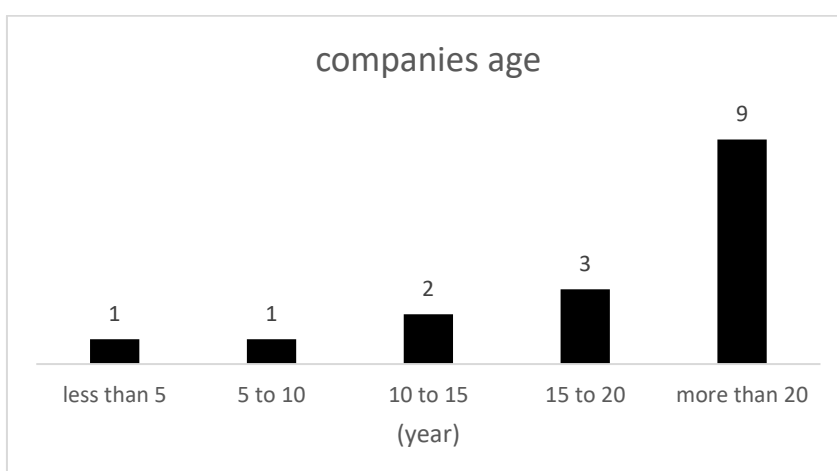
### 4.2.1. Participant general profiles

The following data was collected by use of open-ended questionnaires. The response rate was 70% (16 FMUs) from 23 approached companies. These 23 companies were located across different islands including Kalimantan, Moluccas, and Papua. The age of responding companies varied, but 14 of them have been operating for more than 10 years (Figure 13). This survey also identified that not all concessionaires were operating in terrestrial forests because three of those were logging on natural mangrove forests. Furthermore, 14 FMUs were certified under a single certification scheme, and two FMUs were certified under group certification.

*Table 8. Features of surveyed FMUs*

| Features                    | participating FMUs |
|-----------------------------|--------------------|
| <b>Operating area</b>       |                    |
| Terrestrial forests         | 13                 |
| Mangrove forests            | 3                  |
| <b>Certification scheme</b> |                    |
| Single certification        | 14                 |
| Group certification         | 2                  |
| <b>Market type</b>          |                    |
| Internal                    | 6                  |
| External                    | 6                  |
| Both                        | 4                  |

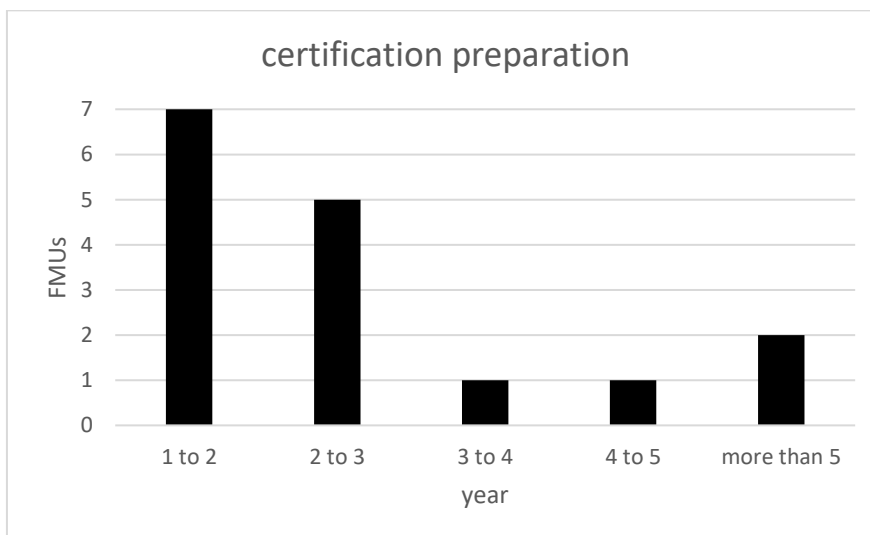
|                            |     |
|----------------------------|-----|
| Distributed questionnaires | 23  |
| Feedback                   | 16  |
| Response rate              | 70% |



*Figure 13. Operating years of FMUs*

In Indonesia, vertically integrated companies are commonly found, especially in the forestry industries, with a big corporation running the business both in forests and industries. Hence, this research also determined the market where these logging companies sold their logs. Internal markets represent processing industries under the same corporate owner as the concessionaires. External markets are industries with different corporate owners. This study found that six companies sold their logs only to internal markets, six companies marketed the logs to external industries, and the remaining four FMUs supplied logs to both markets (Table 8).

The duration of certification preparation also varied, but 75% of the participants (12 companies) needed around one to three years. Meanwhile, only two companies spent more than five years getting FSC certification (Figure 14)



*Figure 14. Length of certification preparation*

Figure 15 explains the company representative's position, where half were managing directors and the rest were field, certification, and legal managers. Other participants comprised a certification coordinator and deputy of certification director. Participants also have years of experience in the forestry sector, of which the shortest was 3 to 4 years of experience and the longest more than ten years (Figure 16).

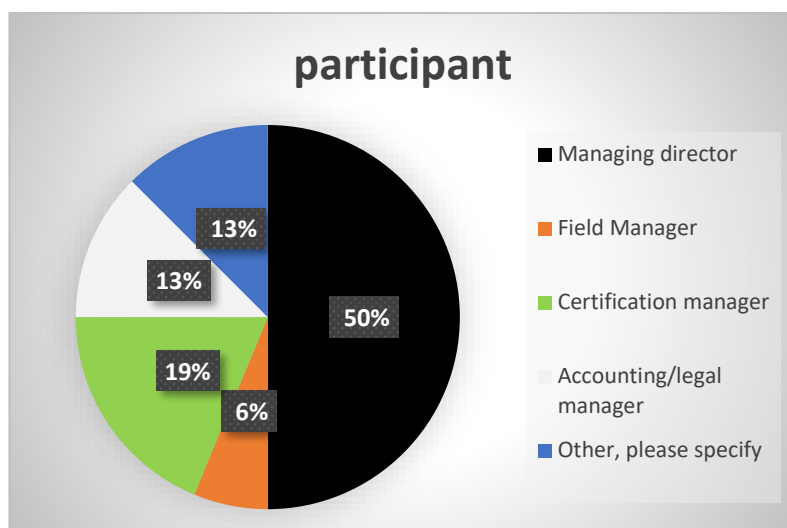


Figure 15. Participant position

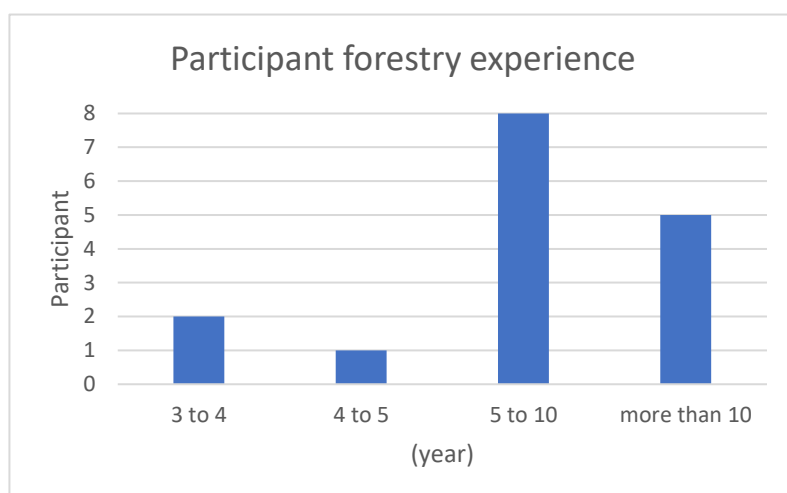


Figure 16. Experience of participants in forestry sector

#### 4.2.2. Motivation towards certification

##### 4.2.2.1. What were the motivations for certification of these companies?

Surveys on motivation to pursue FSC certification were carried out to understand whether FSC met the expectations of the forest managers. Although FSC was a market-based initiative, understanding the expectations of the producers is important in order that both sides' concerns were delivered and addressed. Six different motivations and reasons to get FSC were ranked by the forest managers according to level of importance (Figure 17).

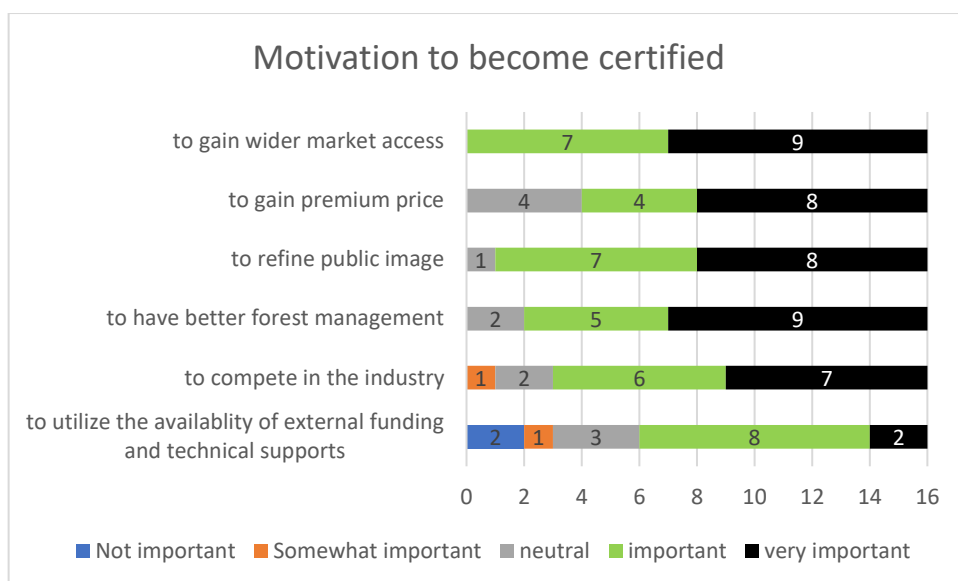


Figure 17. Motivations according to their levels of importance

All six motivations were ranked as either important or very important by the majority of participants. Figure 17 shows that 56% of the participants said that certification was very important to help to implement better forest management and to reach out towards wider market access. Eight companies argued that refining their public image and obtaining a price premium were also very important motivations to become certified. On the other hand, only two companies considered that using the availability of external funds was one of the very important motivations to achieve FSC certificate, but this motivation was believed to be important by eight participating companies.

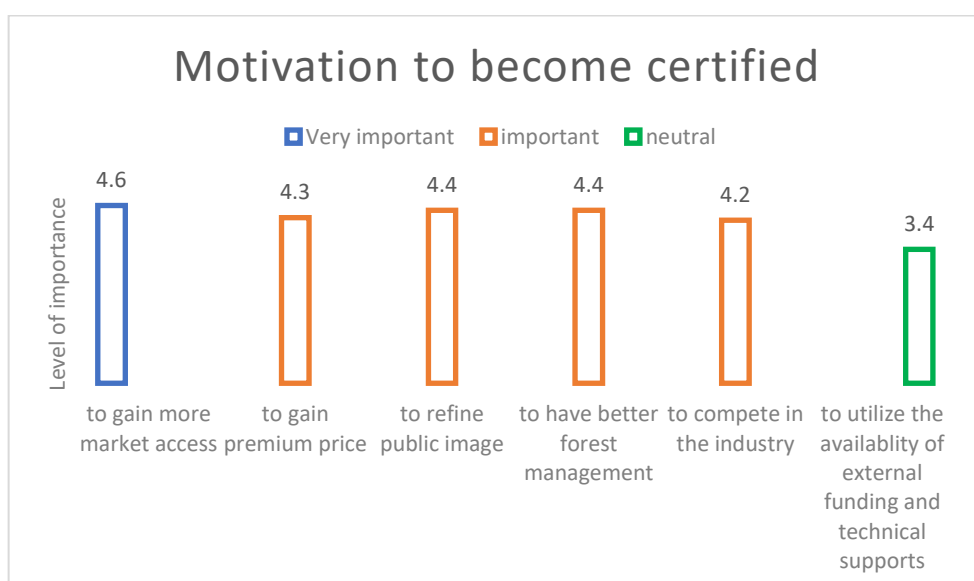


Figure 18. Importance level of certification motivations

The average scoring according to the importance level is provided in Figure 18. The result reveals that reaching out to broader markets was the most important reason for the companies to engage in certification and the level of importance was 4.6 out of 5. On average, it was also important that FSC could help forest concessionaires in improving their companies' public image, implementing better forest management practices, obtaining a price premium, as well as becoming more competitive in the business. Meanwhile, willingness to obtain certification was not necessarily because of the presence of external funding (neutral level). Survey outcomes suggest that economic benefits were the most desirable benefits from certification.

#### 4.2.2.2. *Were the motivations met?*

Further questions also asked if the above motivations were satisfied after the certificates were granted. Figure 19 shows that only the expectation of better forest management was achieved by all concessionaires (100%). All participants believed that FSC helped them in implementing better forest management practices. The certification had also brought a positive image for the companies according to 80% of participants. Moreover, respondents also believed that FSC helped their companies in becoming more competitive in the business (10 participants), reaching out to a wider market (nine participants), and obtaining a premium price (five participants). Meanwhile, some companies were also unsure if those motivations were satisfied. For example, four FMUs were uncertain about wider market access after certification, and seven companies remained unsure about a premium log price.

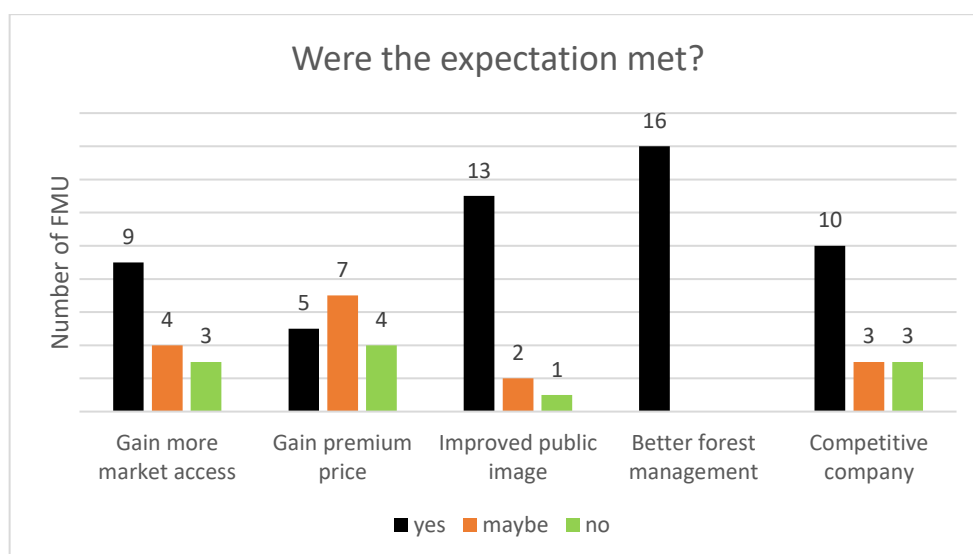


Figure 19. *Expectations achievable status*



#### *4.2.2.3. Will the forest concessionaires continue the certification?*

This study also asked if the logging companies planned to continue to be certified in the future. Some 13 of 16 participants have a positive willingness to continue the certification in the future for various reasons, while three were unsure or would continue with further considerations. The following statements are from the participants' responses to the survey.

*“We would like to continue the certification because we believe that it is one of the ways to manage the forests sustainably”*

*“We clearly would keep our forest FSC certified because our markets request so”*

*“We are not sure yet, we need further and detailed considerations about this certification because it is strongly related to the company's costs and benefits especially because the support from external only last until the second surveillance audit”*

#### *4.2.3. What were the implications of the certification cost to the companies?*

Cost is one of the most important aspects in implementing SFM, especially a high international SFM standard like FSC. To know the precise cost of certification requires a complex and comprehensive analysis. Also, to obtain company expenses may be difficult, because the cost was, somehow, confidential information. Hence in this research, the cost was obtained as an estimated cost from the perspective of certification holders.

##### *4.2.3.1 What was the estimated cost of certification?*

Company representatives were asked about the estimated cost (covering both direct and indirect costs) towards certification. The estimated cost of certification varied between companies from less than US\$2/ha to US\$7/ha, as presented in Figure 20. Nine companies said that they spent around US\$2–5/ha, four FMUs estimated they needed less than US\$2/ha, and two concessionaires spent US\$5–7/ha towards certification. Further information from the graph shows that the estimated cost, around US\$2–5/ha, was chosen predominantly by medium companies (five FMUs). At the same time, only small and medium companies selected a cost less than US\$2/ha. FMU size class, ranked by average estimated cost, is presented in Table 9. Interestingly, the average amount spent by small companies was similar to that for medium

companies. Meanwhile, large concessionaires spent a greater amount than the other two size classes (around 1.4 times greater).

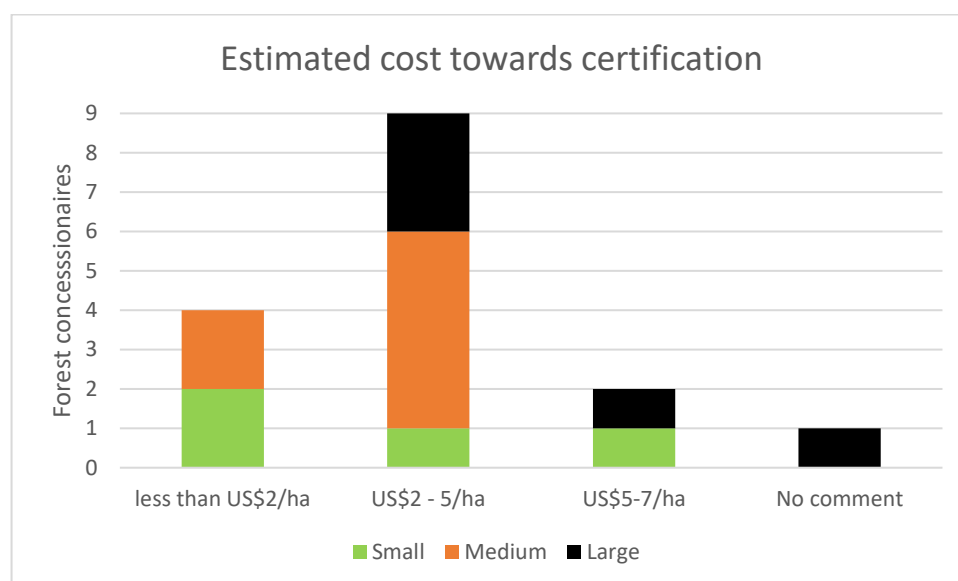


Figure 20. Estimated cost range by FMU

Table 9. Average costs over FMUs size classes

| Size class | Average estimated cost (US\$/ha) |
|------------|----------------------------------|
| Small      | 2.9                              |
| Medium     | 2.8                              |
| Large      | 4.1                              |

Given that the cost may be affected by various factors, it is worth analysing whether the area was one of them; the FMU size was also one of the criteria used by the funding agencies to determine their support. A chi-square test was run to see if there was a relationship between certification cost and the size of FMU. However, the result showed that no association between the amount spent by FMUs towards certification and their area of operation ( $p > .05$ ,  $p = .23$ , Table 10). Surprisingly, Figure 20 and Table 9 indicate a lower cost for small and a higher cost for larger FMUs

Table 10. Chi-square result (estimated cost and FMU size)

| Chi-Square Tests             |                     |    |                                   |
|------------------------------|---------------------|----|-----------------------------------|
|                              | Value               | df | Asymptotic Significance (2-sided) |
| Pearson chi-square           | 15.208 <sup>a</sup> | 12 | .230                              |
| Likelihood Ratio             | 17.646              | 12 | .127                              |
| Linear-by-Linear Association | .781                | 1  | .377                              |
| N of Valid Cases             | 15                  |    |                                   |

#### 4.2.3.2 Cost items towards certification

This study conducted a further survey on what activities the cost was assigned for and how important that cost item was. The answers varied among participants but if we look at the majority answer, all the cost items listed on the survey were believed to be either important or very important (Figure 21). Some 56% of respondents considered the cost of health and safety issues was very important. This response was consistent with the previous analysis where the aspect of health and safety became the most mentioned issue in the first audit. Costs believed to be important by more than half of participants were for infrastructure development (9), audit activities (9), social programmes (9), baseline assessments (12) and employee training (10).

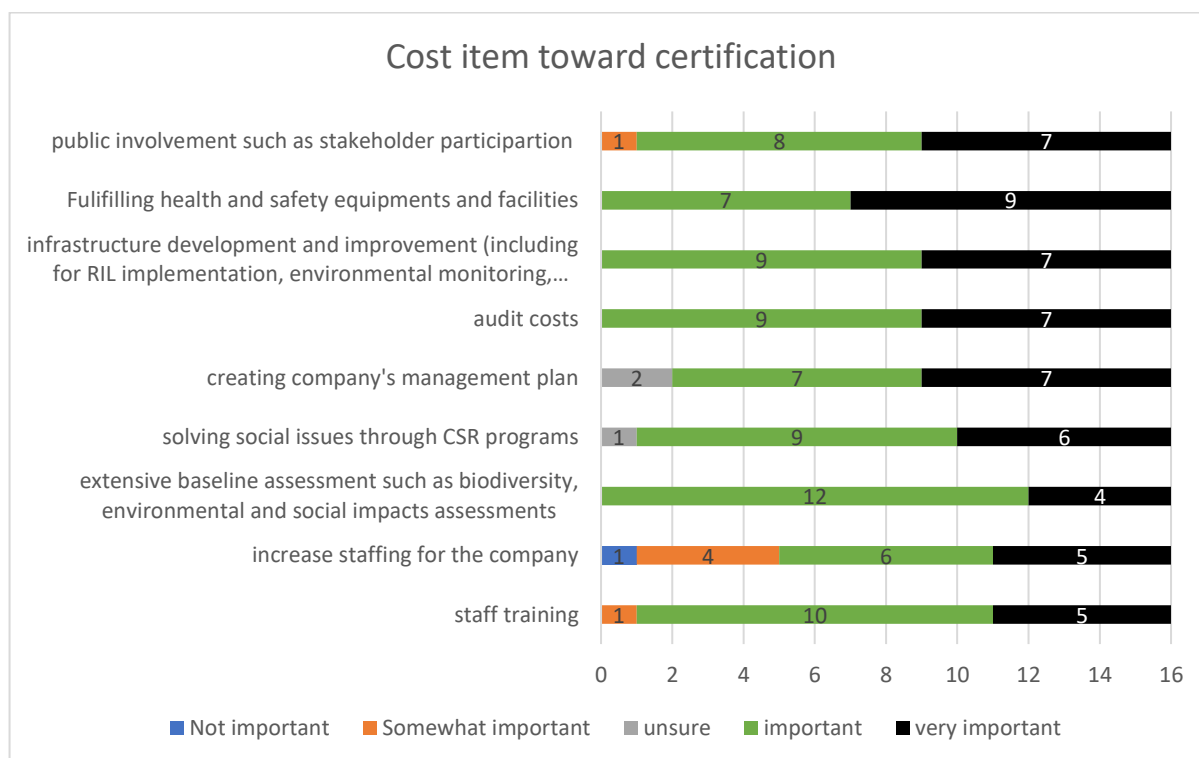


Figure 21. Cost items according to level of importance

Figure 22 shows the average value of the answers, and the results show that all the cost elements were important when participants pursued FSC, but the cost incurred for the health and safety aspect was believed to be the most important (4.6/5). Secondly, costs for audit and infrastructure development were considered important towards certification. Furthermore, the cost to carry baseline assessments, solve social issues, and create a management plan were deemed important too but in the lower value (4.4/5). Lastly, increasing staff was the aspect with the lowest cost importance level (3.6 out of 5).

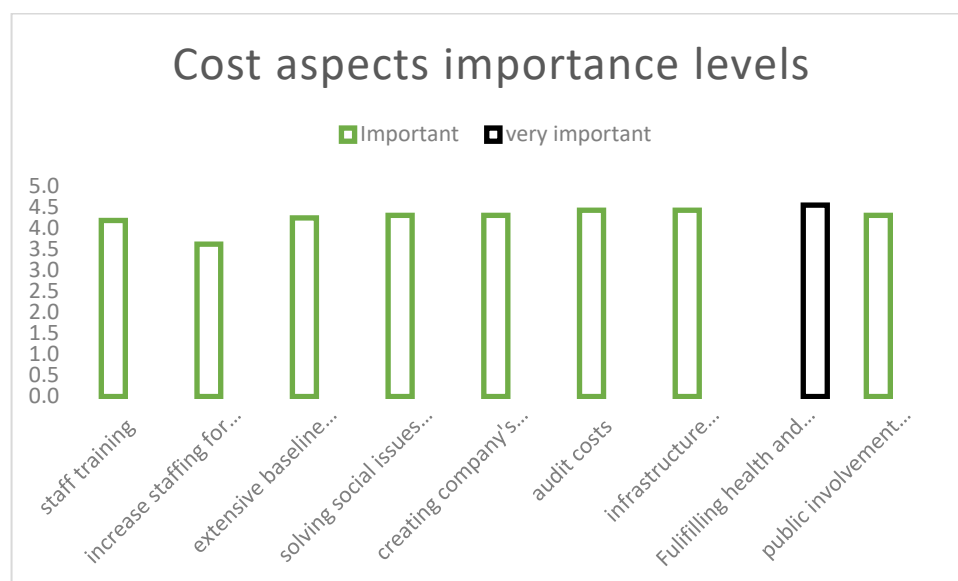


Figure 22. Cost aspect importance level

#### 4.2.3.3. Financial support from donor

Given that the certification process was also financially supported by a foreign agency, it is worth assessing how much the grant was and in what ways the financial support was used in the certification activities. Figure 23 displays a range of funds granted by the funding agency to the participating FMUs. Nine companies obtained around US\$1–2/ha, six were granted about US\$2-3/ha, and only one company received less than \$1/ha. In terms of the size of FMUs, despite most of the small companies being given more funds per hectare than big or medium companies, nevertheless in total, the grant for large companies was still larger than small and medium FMUs. It incorporated the support scheme according to TBI, in which large FMUs (with area > 75,000 ha) would be given US\$2/ha with the maximum amount of US\$300,000 while small FMUs (area < 75,000 ha) could get US\$3/ha with a maximum of US\$150,000. Secondly, the survey examined how this support was implemented in the field. Participants reported that the foreign funds were used to cover certification activities that are not related to

physical investment/support such as extensive baseline assessments, staff training, audit costs, and stakeholder participation.

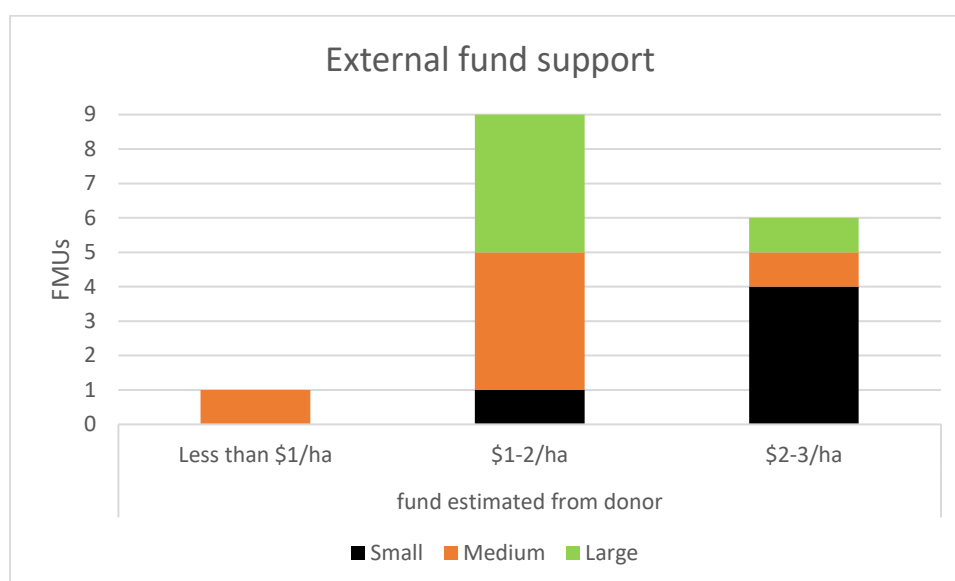


Figure 23. Funds from donor

The estimated cost and donor's fund were compared over different size classes (Table 11). Table 12 shows the costs from both logging companies and the donor sides by average value: it can be seen that large FMUs' costs were higher than the other two classes and they obtained more grants because the fund was for per hectare area.

Table 11. Estimated costs and donor's fund by concessionaires grouped by sizes

| FMU Size      | Estimated Costs (US\$/Ha) | Fund By The Donor (US\$/Ha) |
|---------------|---------------------------|-----------------------------|
| <i>Small</i>  | < 2                       | 2 to 3                      |
|               | < 2                       | 2 to 3                      |
|               | 2 to 5                    | 1 to 2                      |
|               | 5 to 7                    | 1 to 2                      |
| <i>medium</i> | < 2                       | Less than 1                 |
|               | < 2                       | 1 to 2                      |
|               | 2 to 5                    | 1 to 2                      |
|               | 2 to 5                    | 1 to 2                      |
|               | 2 to 5                    | 1 to 2                      |
|               | 2 to 5                    | 2 to 3                      |
|               | 2 to 5                    | 2 to 3                      |
| <i>large</i>  | 2 to 5                    | 1 to 2                      |

|  |        |        |
|--|--------|--------|
|  | 2 to 5 | 1 to 2 |
|  | 2 to 5 | 2 to 3 |
|  | 5 to 7 | 1 to 2 |
|  | na     | 2 to 3 |

*Table 12. Estimated average certification costs from both parties*

| <b>Size</b>   | <b>Cost<br/>(US\$/ha)</b> | <b>Donor fund<br/>(US\$/ha)</b> |
|---------------|---------------------------|---------------------------------|
| <i>Small</i>  | 2.9                       | 2.0                             |
| <i>Medium</i> | 2.8                       | 1.6                             |
| <i>Large</i>  | 4.1                       | 1.8                             |

#### 4.2.4. Advantages of certification

##### *4.2.4.1. Certification advantages to forest management*

Certification indeed benefited various aspects within forest management. Lists of expected benefits are presented in Figure 24 and their level of importance considered by forest concessionaires. The data show that the majority of companies considered that all the benefits listed on the questionnaires were either important or very important; few said less important or not important. Improvement to worker's health and safety aspects and logging practice were benefits considered very important by more than half of the participants (56%). Meanwhile, 56% of the participants also believed that improving employee skills, forest protection, company transparency, and empowering the poor and less favoured were important through certification.

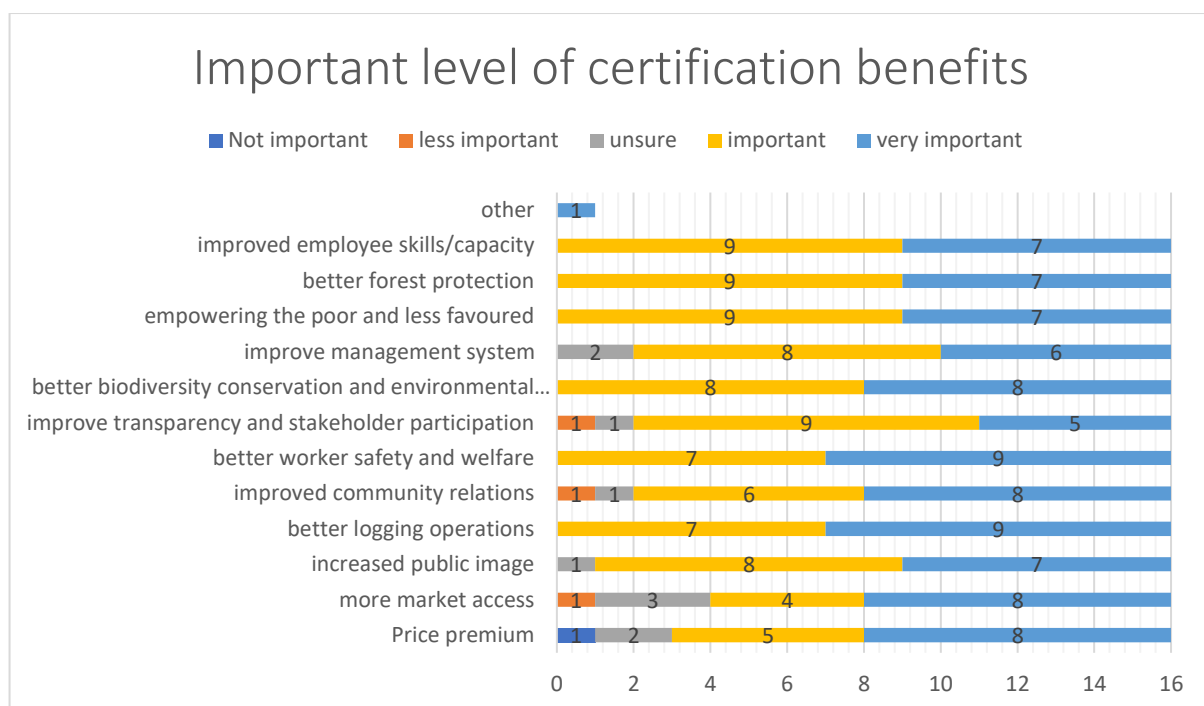


Figure 24. Benefits importance level according to forest concessionaires.

On average (Figure 25), the most important certification benefits expressed by FMU were for the RIL and health and safety aspects (4.6 out of 5). These two aspects might be the aspects that were perceived to be significantly improved after the certification (e.g., the implementation of health and safety equipment for all employees). These results correlate with the previous CAR analyses of the audit reports in which these two aspects were the most common problems among FMUs before getting certified. Economic benefits (price premium and market access) were believed to be important but in the lower level (4.2 out of 5). Finally, the least important benefit was related to the improvement of transparency and stakeholder participation (4.1/5).

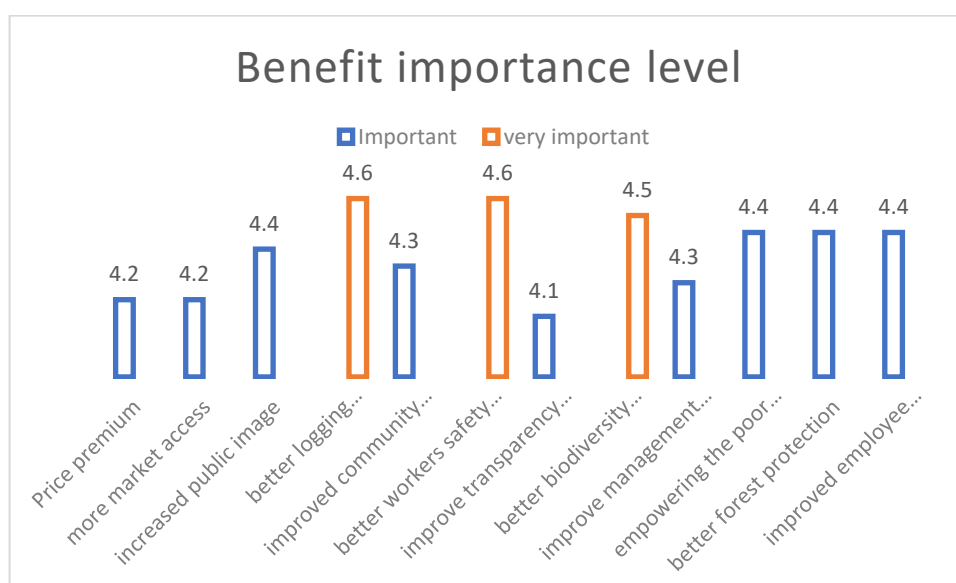


Figure 25. Average expected benefit importance levels

#### 4.2.4.2. Achieved benefits

After assessing the importance level of expected certification advantages, the benefits achieved were also analysed. The result of the survey is displayed in Figure 26. It can be seen that while advantages for employee skills and biodiversity conservation were considered achieved by all respondents, certification did not entirely bring wider market access (five companies did not achieve) nor a price premium (11 FMUs did not achieve) to all concessionaires. The low achievement level in those two benefits supported the assessment result on the expected benefits of certification, in which price premium and broader market access were considered to be at the lower level of importance compared to other benefits.

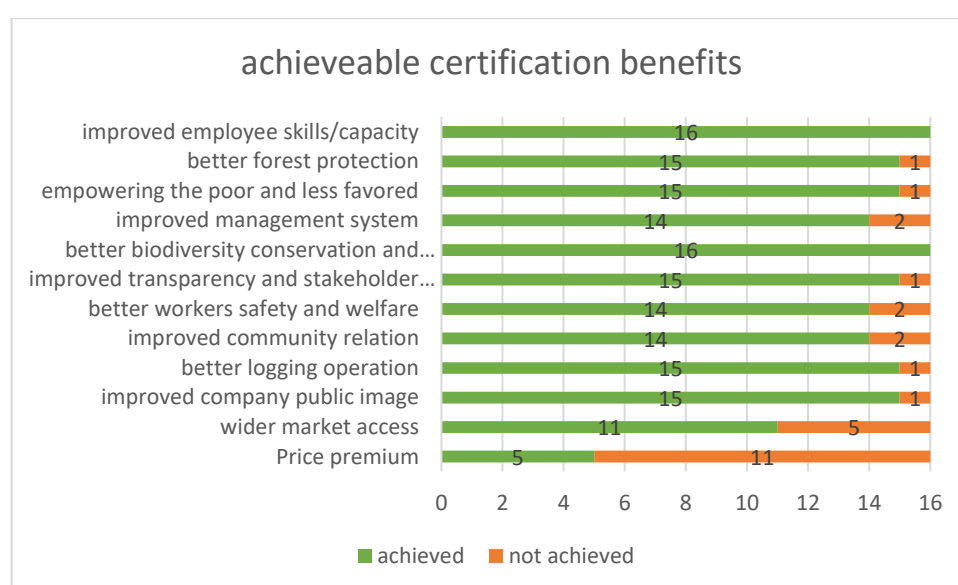


Figure 26. Advantages achieved at the concessionaire level

#### 4.2.4.3. Economic advantages of certification

##### 4.2.4.3.1 What was the price premium?

FSC was intended to benefit the forests in all SFM aspects (social, environmental and economic). While social and environmental benefits may be difficult to quantify, monetary benefits were clearer to understand (e.g., the price premium). Premium price refers to the additional price of logs as a result of being certified. In this research, the estimated range of price premium was used as an approach to get the general view of the monetary benefits. Furthermore, surveyed companies were classified into two different market types to see if they have an association with the price premium. The first is concessionaires with external market type that sold the logs only to industries under different corporate management or both (the same or different corporate industry). Secondly, concessionaires with internal market type that



sold the wood entirely to industries within the same owner/corporate group. The result shows that the price premium varied from 0 to <20% and was achieved by only 33% of the total participating FMUs. This research found that within the five companies that received a price premium, four of those supplied logs to external markets. Meanwhile, 10 companies, consisting of six with external markets and four with internal markets, stated no price premium was obtained at the FMU level (Figure 27).

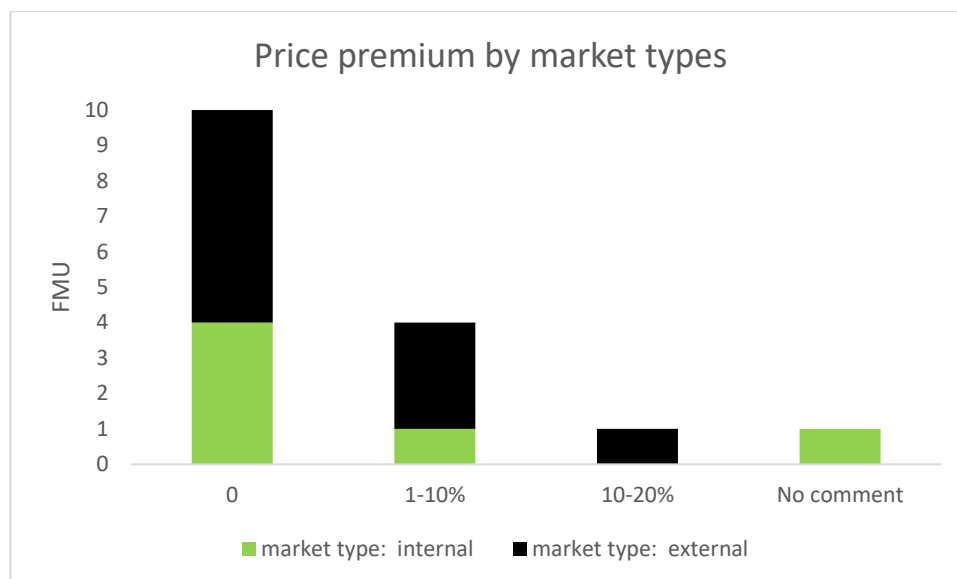


Figure 27. Achievable range of price premium

Further analysis was done to see if market types were statistically related to the premium price using a chi-square test (Table 13). Data show no statistically significant relationship between the type of market and achievable price premium ( $p = .310$ ,  $p > .05$ ).

Table 13. Chi-square tests for price premium and company market types

| Chi-Square Tests   |                    |    |                                   |
|--|--------------------|----|-----------------------------------|
|  | Value              | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square   | 2.344 <sup>a</sup> | 2  | .310                              |
| Likelihood Ratio   | 2.769              | 2  | .250                              |
| Linear-by-Linear Association   | 2.170              | 1  | .141                              |
| N of Valid Cases   | 15                 |    |                                   |
| a. 5 cells (83.3%) have expected count less than 5. The minimum expected count is .47. |                    |    |                                   |

#### 4.2.4.3.2 How much were the additional sales after certification? Is selling certified logs easier?

This survey also asked about the estimated additional sales within various ranges as the result of certification. Only four companies reported that they obtained more sales after being certified, within the range of 5–10% and 30–40%. Twelve companies explained that there were no additional sales after the certification was granted (Figure 28).

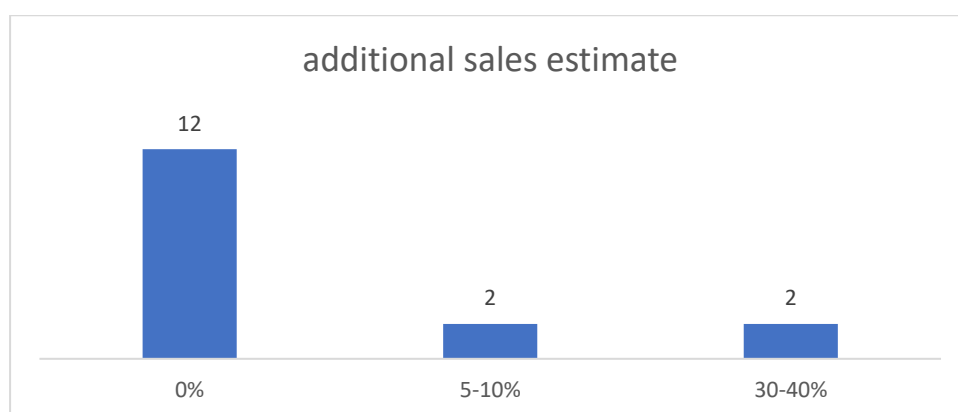


Figure 28. Additional sales estimated by FMUs

When this study further asked about the ease of selling logs after certification, results indicated that nine participants argued that there were no certification impacts on log sales (no difference between pre- and post-certification). However, six FMUs considered that selling logs become easier with certification (Figure 29).

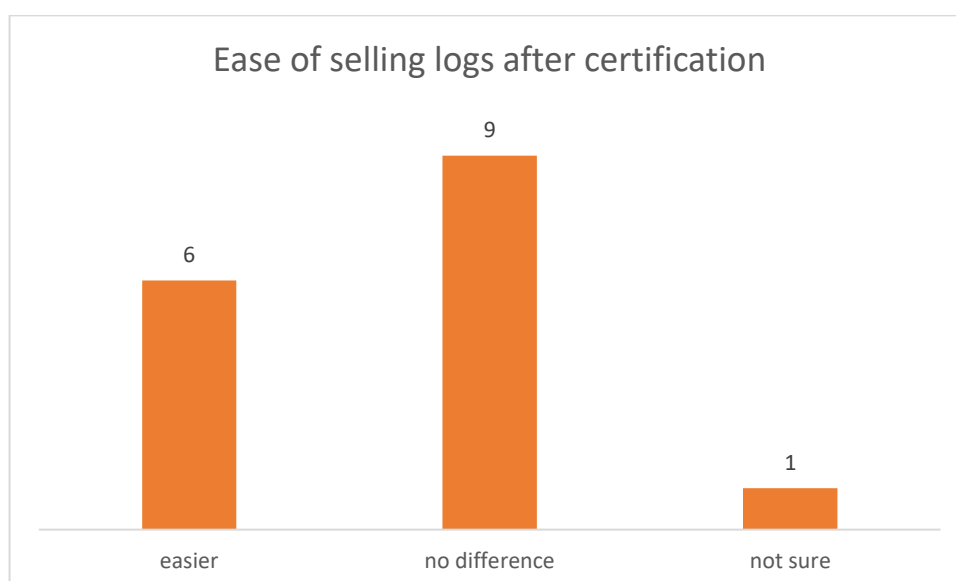


Figure 29. FSC impacts on logs selling

#### 4.2.4.4. Other benefits from certification

The effect of certification on eliminating external pressure was also investigated. In Indonesia, the external parties such as NGOs are very active in monitoring the business related to forestry. Hence, this research attempted to examine if certification could be one of the ways to deal with such an issue. While the result looks moderate, six companies were unsure about it because they did not really think that external pressures existed prior to the certification. However, five FMUs considered that certification helped them minimise the pressure from NGOs and the other five believed certification did not reduce the NGOs' criticism (Figure 30).

Other advantages related to the recognition from external parties after certification was also assessed through the survey. Figure 30 clearly shows that the majority of participants said there was no recognition, indicating that such a voluntary certification scheme had less recognition from the outsiders. Five concessionaires revealed that they were given recognition after being certified. For example, recognition from APHI (Indonesian forest concessionaires association) or being invited to be a speaker in various national or international events related to SFM. Two companies were unsure about the recognition after FSC was granted. Two companies were unsure about the recognition after FSC was granted.

In the final part of the study, this survey examined if the costs towards certification were compensated for by the economic benefits. Half of the participants were unsure about it while four companies said yes and the other four reported no.

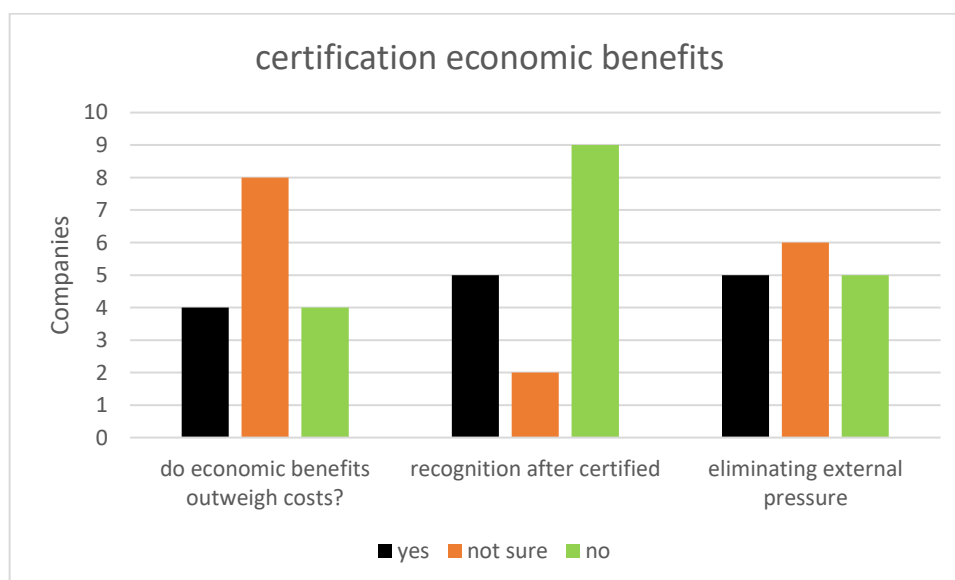


Figure 30. Other economic benefits of certification

#### 4.2.4.5. What economic advantages were facilitated by the donor?

The donor played an important role in the certification affairs of these companies. This research was intended to investigate the further role of that organisation in supporting the economic benefits of certification, taking into account the donor organisation's purposes. Hence, this study enquired about the economic benefits that might be facilitated through the funding agency. Some 14 companies believed there were economic benefits supported by the donor after certification (Figure 31). The answers from these 14 companies varied and focused on aspects such as the benefits of market access and refining the company public image. The survey found that 11 concessionaires reported that the donor played an important role in supporting a better public profile of the companies, for instance, through publications and events organised by TBI. Only six companies said that the donor assisted in reaching wider markets, such as through trading expos and meeting with prospective buyers. The annual trading expo was held by TBI to provide a platform where customers and buyers meet. None reported the presence of a price premium through the support of the donor (Figure 31).

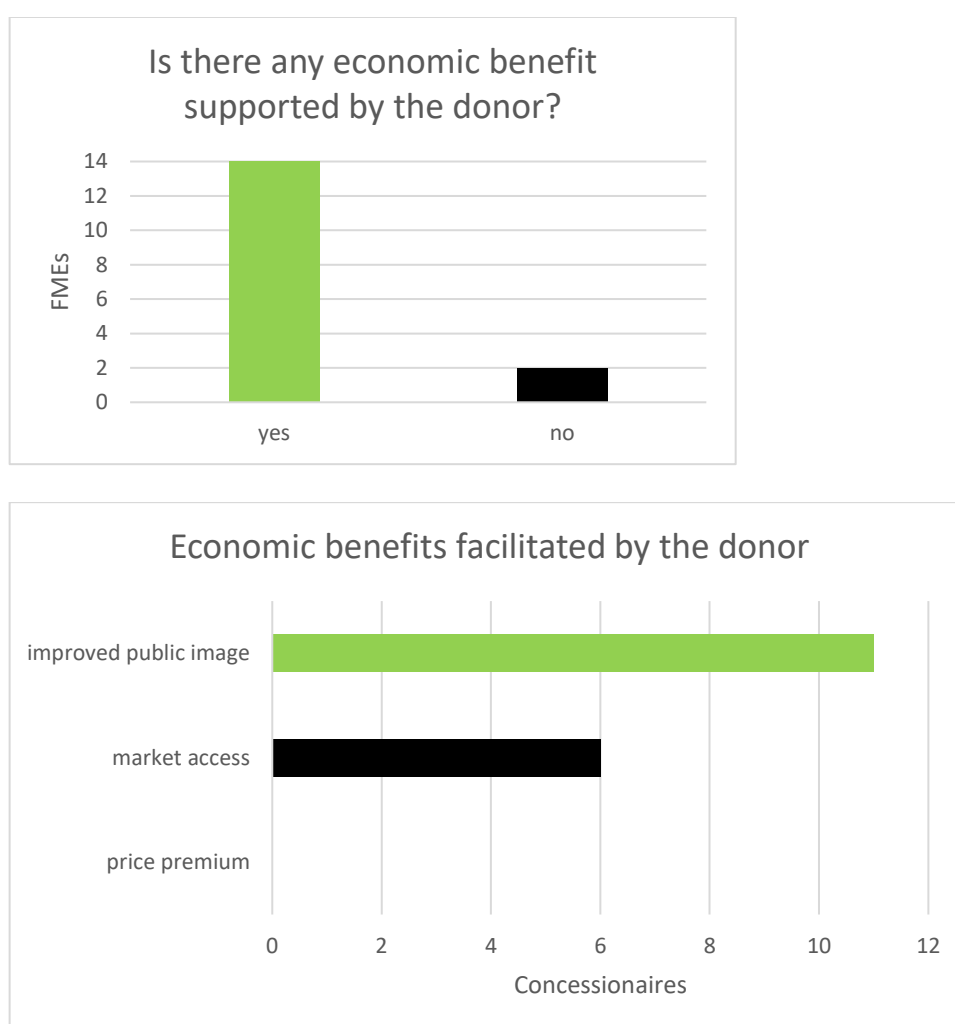


Figure 31. Economic benefits facilitated by the donor

#### 4.2.5. What were the challenges before and after certification?

Challenges are inevitable in managing forests. Hence this research intends to generally draw a picture of whether the certification diminished the difficulty of the challenges in forest management from the perspective of forest managers. Twelve challenges that FMU might experience before and after certification were evaluated and compared (Figure 32).

Prior to engaging in the certification process, there were two challenges considered to be difficult by forest concessionaires. Firstly, were challenges related to internal social aspects: FMUs found it difficult (3.8 out of 5 difficulty levels) to change the behaviour of staff to follow the standard procedure (e.g., health and safety equipment usage). This issue turned out to be somewhat easier after certification. Next, the cost to implement and achieve an FSC certification was the second most difficult challenge expressed by companies (3.6 out of 5) and it levelled off to be neutral after certification. Overall, there were still forest management challenges, despite the certification having been achieved. However, problems generally tended to be simpler once FMUs were certified.

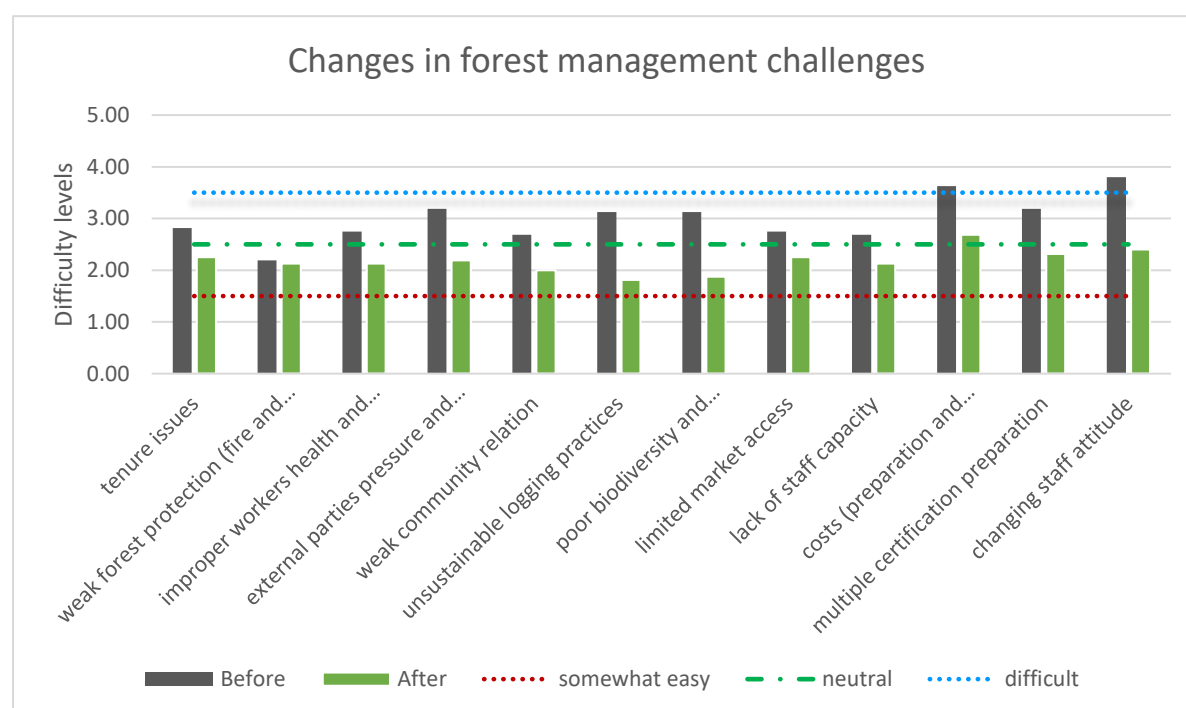


Figure 32. Challenge transformations before and after certification

#### 4.2.6. Disadvantages of certification

Certification might not always bring advantages to the logging companies, thus information about the drawbacks was also important to examine. FMUs representatives were asked about a list of certification disadvantages along with their importance levels. Results varied between disadvantage, but generally, it can be seen that the majority of the potential disadvantages were considered to be not important (or assumed not to be a disadvantage of certification) except for costs related to preparation and certification audits. Ten companies stated that the high audit costs (including for main assessment and surveillance) were a very important disadvantage of certification. At the same time, FMUs also considered the time required and preparation cost (cost incurred to upgrade the management to comply with the standard, excluding audit costs) towards certification were important drawbacks (Figure 33). Only one company argued that both aspects were not important disadvantages.

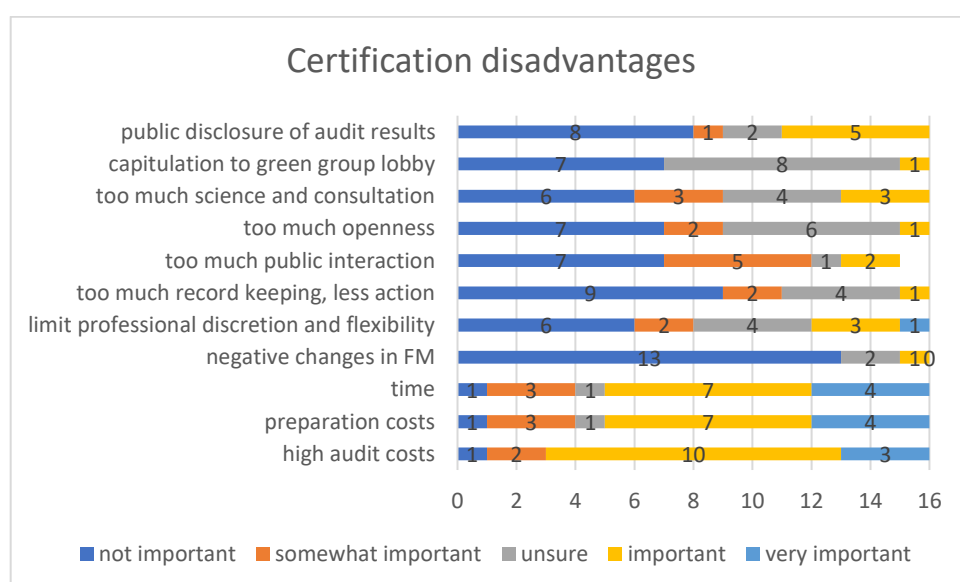


Figure 33. Certification disadvantages by their importance levels

On average, the two most important disadvantages were costs for audit and preparation as well as time towards certification. Those disadvantages look more important than others with the level of importance 3.8 and 3.6 respectively. Next, participants were not really sure about the drawbacks of limiting professional discretion and flexibility caused by the certification. At the same time, concessionaires considered some aspects were less important weaknesses of certification, such as too much record keeping and too much openness. Finally, negative changes in forest management were perceived as a not important disadvantage with level of importance being 1.4 (Figure 34).

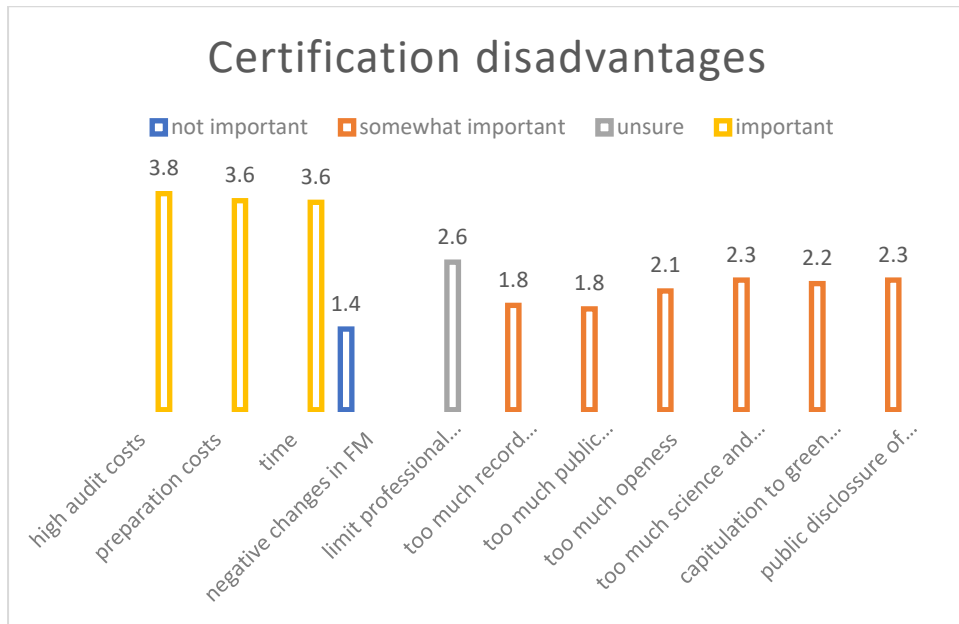


Figure 34. Average importance level of certification disadvantages

4.3. RO.3 To provide a perspective on FSC impacts and the causes of certificate suspension using a case study of PT KLIA and PT BIOS implementing group certification and operating in natural mangrove forests

4.3.1. How was the certification process carried out by PT KLIA and PT BIOS under group certification scheme?

KLIA and BIOS were the first companies to be FSC-certified within the group certification scheme at the corporate level in Indonesia (WWF, 2015). The success of certification in these two companies could not be separated from the involvement of various stakeholders along with their FSC engagement process. Table 14 shows the different stakeholders involved and their identified general roles. These stakeholders supported KLIA and BIOS towards certification, some of them since the first engagement with FSC.

*Table 14. Stakeholders involved in KLIA and BIOS FSC certification*

| <b>Stakeholder</b> | <b>Role</b>                                       | <b>Focus aspect</b>   |
|--------------------|---|---|
| IDH                | Funding agency                                    | sustainable trading by securing commodity sources sustainability  |
| TBI                | IDH implementing agency                           | - tropical forest preservation<br>- become a platform to collect and to address subject expert matters related to forest certification experienced by forest concessionaires                  |
| APCS               | Certification group manager                       | check the compliance of group member activities with the FSC requirements   |
| Nepcon             | Consultant for certification audit and assessment | audit and verify the compliance of KLIA and BIOS forest management practice to FSC standard   |
| WWF                | Coaching organisation                             | - support the capacity-building of the companies towards certification including preparing species conservation such as <i>proboscis monkey</i> in the landscape where KLIA and BIOS operated |

From the time of their formation and until late 2017, KLIA and BIOS were companies under the same management group. Apart from their charcoal processing plant, the logs were mainly sold to a domestic woodchip industry that exported them to supply the Asian market (China, Japan, Korea and Taiwan) through Green Forest Ltd. The main purpose in obtaining FSC was to improve the company's public profile that mangrove forest could be sustainably managed for commercial purposes. Secondly, they expected FSC would be an added value to



attract more markets both in the existing market such as Japanese and Korean wood energy markets and in other countries. At the same time, the idea of group certification was also promoted and supported by these organisations involved who, at that time, had related support and programmes. Group certification was later chosen as one of the possible schemes, taking into account cost constraints and the small concessionaires' areas. The certification on a mangrove ecosystem and group scheme at the corporate level was a rare case in the world and that drove the initial interest from these external organisations. In preparation for the certification, APCS and WWF were actively involved as group manager and coaching organisation respectively. According to the FSC group certification toolkit, the responsibility of the group manager was to check the compliance of the group members' activities with FSC standards and correct them if non-compliance was identified (FSC, 2016). At the same time, coaching organisations took the responsibility of human resource capacity development. In this group certification, the cost for the audit was borne by the group manager and members. However, KLIA and BIOS needed to pay annual membership fee to APCS. Costs incurred to comply with the standards were borne by each member.

It took two years for these companies to finally achieve the certificate in 2015. The result of the main audit was quite satisfactory with only 12 minor non-conformities identified. Following the first surveillance audit in 2016, three major and three minor findings were raised along with a conclusion about severe illegal logging issues faced by KLIA. Nevertheless, the problems have been addressed, and FMUs have made efforts to reduce illegal logging. In the second surveillance audit in 2017, KLIA Mangrove had been removed from the scope of certification due its inactive status and withdrawal from the group scheme. However, FSC certificate status was still approved according to the audit report prepared by Nepcon in 2017, but BIOS was the only company included within the scope of certification. In 2018, FSC certificate status was suspended for this group scheme. Figure 35 depicts the situations in PT KLIA and PT BIOS according to FSC certification continuum.

The historical non-conformance during the FSC audits are presented in Table 15. The level of non-conformance generally decreased from the main audit to surveillance 2 and the criteria varied in each audit. Interestingly, criterion 4.2 was continuously present in all audits. This might indicate that health and safety was a serious issue in these companies.

Table 15. Non-conformance changes during FSC audit in KLIA and BIOS from 2015 to 2016

| Criteria reference   | Main audit |       | Surveillance 1 |       | Surveillance 2 |       |
|--|------------|-------|----------------|-------|----------------|-------|
|  | Major      | Minor | Major          | Minor | Major          | Minor |
| 1.1 national and local laws compliance   |            |       |                | ✓     |                |       |
| 1.2 fees, royalty and taxes  |            |       |                |       |                |       |
| 4.1 communities are given employment, training and services  |            | ✓     |                |       |                |       |
| 4.2 health and safety for employees & families   |            | ✓     | ✓              |       |                | ✓     |
| 4.4 evaluation of social impacts   |            |       |                | ✓     |                |       |
| 4.5 mechanism to solve grievances  |            | ✓     |                |       |                |       |
| 5.3 minimise waste (from harvesting)   |            |       |                |       |                | ✓     |
| 6.1 assessment of environmental impact   |            |       |                |       |                |       |
| 6.2 RTE species protection   |            | ✓     |                |       |                |       |
| 6.3 ecological functions and values  |            |       |                |       |                | ✓     |
| 6.5 reduce impact logging operations   |            |       |                |       |                | ✓     |
| 6.7 waste (garbage) disposal management  |            | ✓     |                |       |                | ✓     |
| 7.1 management plan content  |            | ✓     |                |       |                |       |
| 7.2 periodic revision of management plan   |            | ✓     | ✓              |       |                |       |
| 7.4 public summary of management plan  |            | ✓     |                |       |                |       |
| 8.1 frequency, reference, and replicability of monitoring  |            | ✓     | ✓              |       |                |       |
| 8.2 monitoring indicator: productivity, composition changes, socio-economic impacts, economic aspects of company |            | ✓     |                |       |                | ✓     |
| 8.3 CoC  |            |       |                |       |                |       |
| 8.4 use and implementation of results from monitoring  |            | ✓     |                |       |                |       |
| 8.5 public summary of monitoring   |            | ✓     |                |       |                |       |
| 9.2 consultation process of HCV assessment   |            |       |                |       |                |       |
| 9.4 monitoring of HCV  |            |       |                | ✓     |                |       |
| Total  | 0          | 13    | 3              | 3     | 0              | 6     |

#### 4.3.2. Factor causing certificate suspension in PT KLIA and BIOS

Relevant stakeholder interviews were carried out to understand the root causes leading to certificate suspension in the case of KLIA Mangrove and BIOS. This method was employed because no report or data was available on either the FSC website or any other sources available. However, from the three forest management audit reports, it was clear that illegal logging is one of the concerns for these companies.

Perspectives from the internal and external companies were assessed to help in finding the root causes and classifying the problems. Table 16 summarises the challenges that led these companies towards the suspension of their FSC certification.

*Table 16. Challenges which led to certificate termination*

| Internal   | External  |
|--|---|
| Changes in internal corporate management   | Illegal logging, competition with legal and illegal domestic charcoal industries                            |
| Companies do not have processing facility to add the value   | Weak law enforcement and lack of supporting governmental policy   |
| High operation and certification costs (group manager and maintenance)                                 | Limited domestic markets (that suit the current capacity)   |
| Small production area and small production capacity (due to the limited advance harvesting technology) | Significant price difference between the log price and the final products such as briquette and wood pellet |
|  | No premium price  |

The cases of KLIA and BIOS can be seen through two different sides: the situation from the internal and external business. That interaction between these challenges violated the sustainability of the business, and hence FSC standards were no longer met and concessionaires discontinued certification. After leaving the group, KLIA decided to stop operating and supplying logs to the old markets because of the imbalance between cost and perceived revenues while they do not have the processing facility to add to the log values. The benefits from logs cannot fully cover the operational cost. Low technology (manual loggings) used for harvesting limited their production capacity. Hence, despite offers from the new big foreign market being available, these companies could not meet the demand for a quantity that was much higher than their production capacity. At the same time, apart from operational costs,

they also needed to bear other costs, including a group manager and certification implementation costs.

A similar case also occurred in BIOS where, until this research was being carried out, they still operated with a carry-over harvesting plan to supply their own charcoal factory. However, they no longer have an approved annual harvesting plan for the next year. Figure 36 shows the situation in KLIA and BIOS as well as the challenges they faced.

In the external situation, the price of FSC-certified logs could not be any higher to benefit the company in the current production capability as it had no price premium. Furthermore, there is significant price difference between the log and the final product such as briquettes and wood pellets. In addition, they were threatened by illegal logging, strong competition from legal and illegal domestic charcoal industries, weak law enforcement, and limited local and small markets for mangrove wood. Therefore, the FSC certificate was not worth retaining and continuing to run the business was difficult.

#### 4.3.3. What were the certification impacts to those companies?

Despite the FSC certification no longer being in place, there were various impacts of certification that could be observed, both from the report analysis and the perspective from relevant stakeholders. Table 17 presents the summary of FSC certification impacts for KLIA and BIOS extracted from interview transcripts and reports analyses. In general, FSC has improved the forest management performance through the changes of performance from the pre-assessment process to the main audit by 40% (accounted for from the number of CARs identified)

Table 17. Summary of observed certification impacts in KLIA Mangrove and BIOS

| Aspect        | Impact   | Indicator   |
|---------------|--|---|
| Economic      | <ul style="list-style-type: none"> <li>• Improved company image</li> <li>• Ease the way to achieve Indonesia Sustainable Production Forest Management standard (PHPL)</li> </ul> | <ul style="list-style-type: none"> <li>• Attract some international research and tourism activities</li> <li>• Invited to various international forums</li> <li>• Attract potential green investor</li> <li>• Good score of PHPL certificate</li> </ul>   |
| Environmental | Progressive environmental conservation activities  | <ul style="list-style-type: none"> <li>• Set aside 27% of total area as HCV area</li> <li>• Restoration for <i>proboscis monkey</i> corridor</li> <li>• Multi-stakeholder restoration programme</li> </ul>  |
| Social        | Improved social relationships  | <ul style="list-style-type: none"> <li>• Increase capacity building of the employee from training</li> <li>• Implementing better health and safety procedure</li> <li>• Better relationship with surrounding villages and local NGOs through programmes (e.g., silvofishery, tourism programme, collaborative patrols)</li> </ul> |

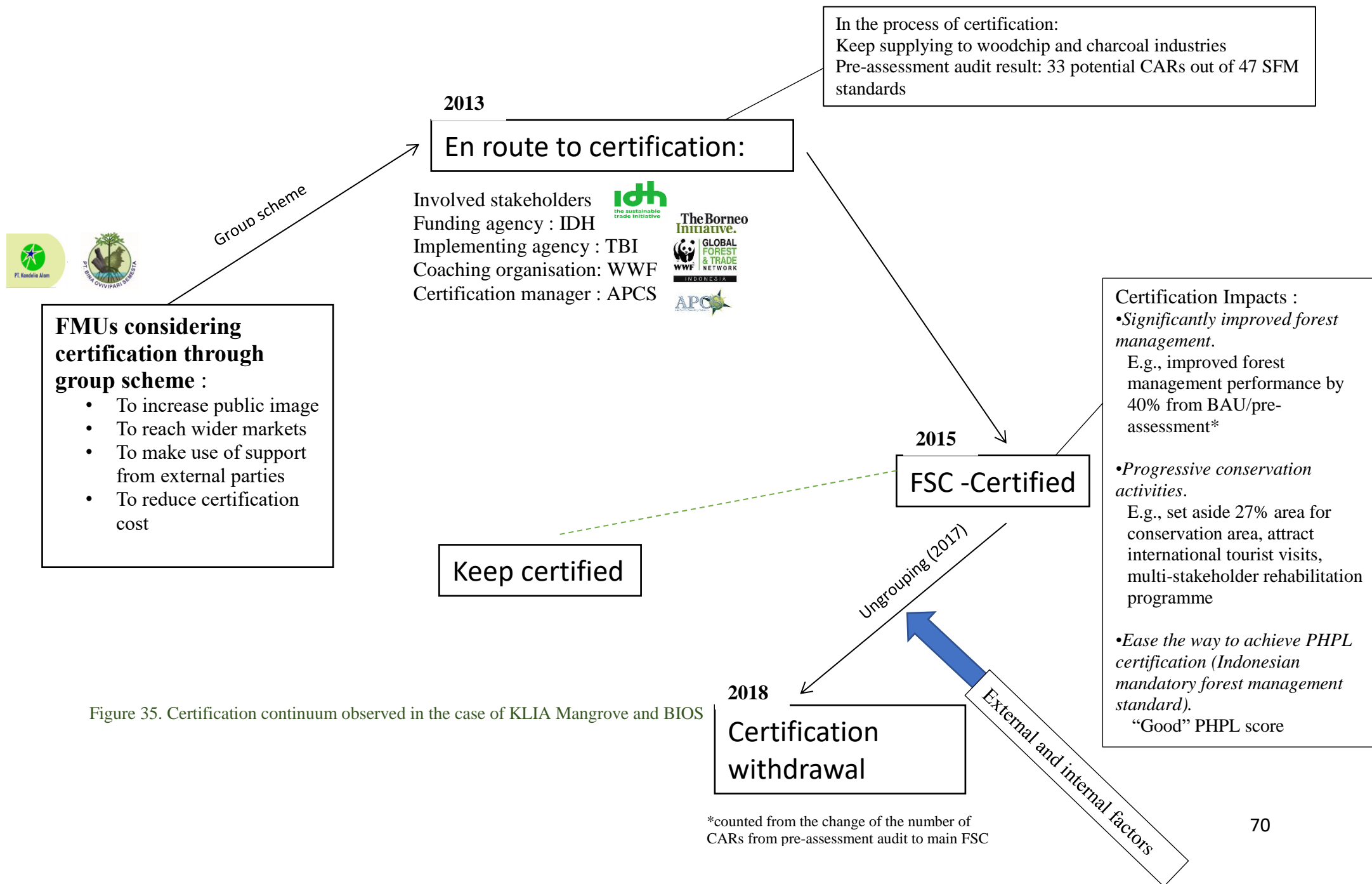
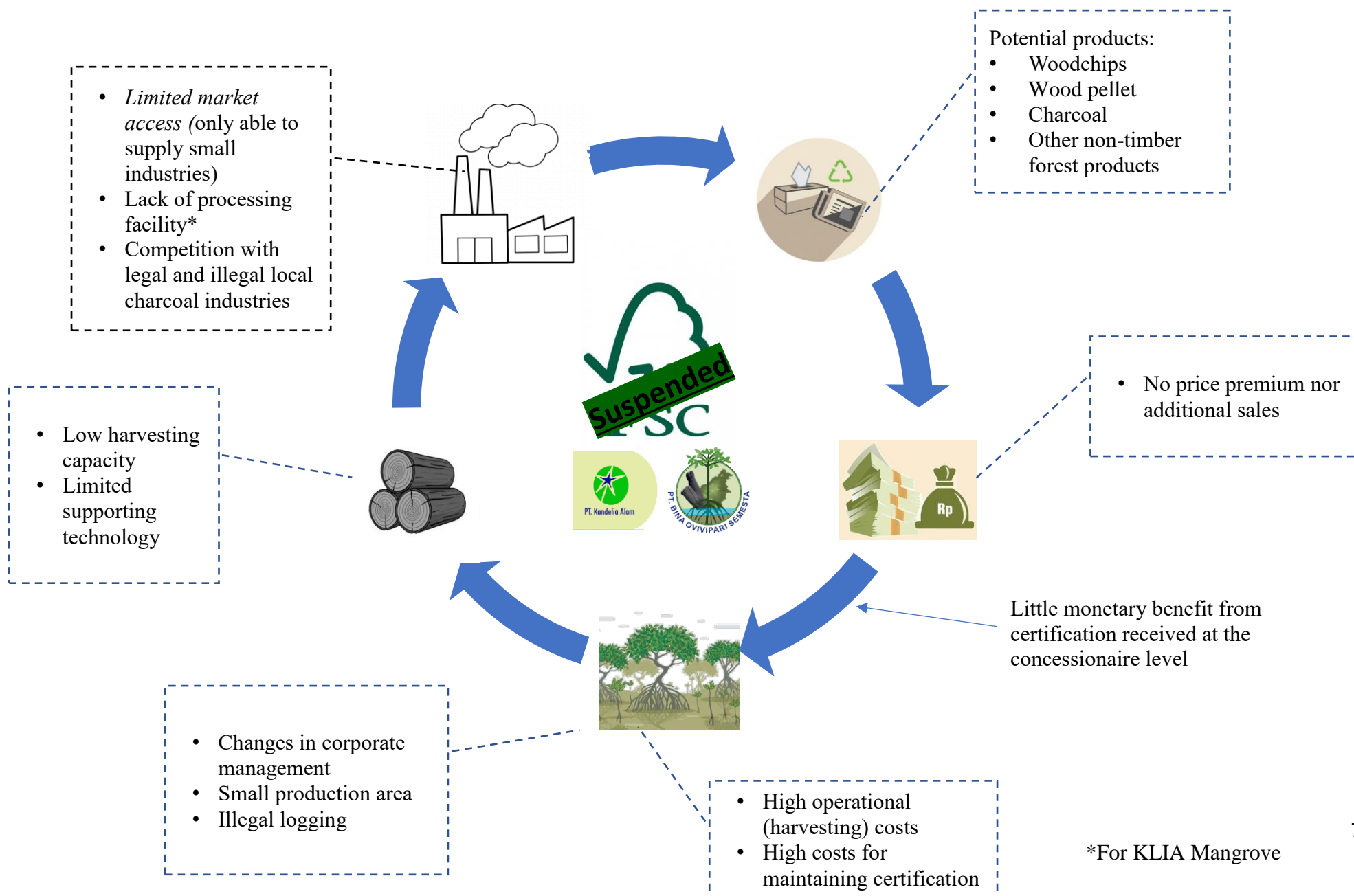


Figure 35. Certification continuum observed in the case of KLIA Mangrove and BIOS

Figure 36. Situations observed at KLIA Mangrove and BIOS leading to FSC certificate withdrawal



## CHAPTER 5

### DISCUSSION

#### 5.1. Problems in managing natural forest concessionaires prior to certification and influencing factors

##### 5.1.1 Common problems in forest management prior to certification

The most commonly identified issues faced by the concessionaires were related to social and environmental aspects, specifically with regard to health and safety regulation (criterion 4.2) and implementation of the RIL guideline (criterion 6.5). The finding in this research is also supported by a study carried out by Claros et al. (2009) who found that criteria 4.2 and 6.5 were the most frequently mentioned issues by FSC auditors in the tropics, with a frequency of 87% and 74% respectively. The low compliance rate reflects the complexity of challenges associated with these aspects.

For instance, enforcing the use of personal safety equipment (the most common finding for criterion 4.2) is not only related to developing compliance at the procedural or system level but is also apparent at the personal practice or safety behaviour level of the workers. This is also related to the lack of appropriate intensive training undertaken by the companies in order to raise the awareness of employees. Furthermore, raising awareness through an appropriate training programme can become even more challenging where there are different levels of education among tenured and contracted employees. The internal staff are usually found to have a better educational background than the contracted staff, who, incidentally, are usually the workers that are involved in the higher risk activities (e.g., harvesting). Intensive field checking is hence required to ensure that the company's health and safety policy is being implemented in the forests on a regular and ongoing basis and not just for the purpose of meeting audit compliance.

The lack of appropriate implementation of criterion 4.2 can also be associated with the differences between the FSC standard and the related government regulation. According to a comparison of Indonesia Sustainable Production Forest Standard (*PHPL*) and the FSC requirements carried out by Ruslandi et al. (2014), the implementation of the government regulations was regarded as generally weak or non-existent in the health and safety component as no detailed guidelines were available to enable compliance with the procedures. In



consideration of this situation, the FSC standard has played a role by complementing and improving the implementation of the government regulations. In short, the high frequency of this criterion indicates that the working conditions in Indonesia are still relatively poor according to the FSC standard.

The RIL implementation guideline was the second most mentioned criterion. Indeed, a high standard of RIL was one of the most significant factors in the promotion of FSC, in response to severe forest degradation at a concessionaire level in tropical countries, including Indonesia. Although RIL was already incorporated into the natural forest management regulations in Indonesia through the TPTI system (*Tebang Piliha Tanam Indonesia/* Selective cutting and planting), there were numerous factors contributing to the lack of implementation in the field (Elias, 2001):

- lack of regulatory control over harvesting practices
- limited specificity in how to conduct RIL techniques
- lack of understanding of the benefits of RIL
- lack of understanding of the steps necessary to implement RIL and lack of specific technical services.

Programmes brought by international NGOs like TFF and TFT thus became a platform to improve the practices of concessionaires and so address issues such as lack of capacity and understanding about RIL benefits. As a result, many partnerships between these NGOs and forest concessionaires (including those with IDH and TBI support) were established in the early 2000s to promote RIL as an activity that was cost-effective, saved money and reduced detrimental environmental impacts (TFF Indonesia, 2016). The concessionaires also acknowledged that RIL was the gateway that brought them closer to gaining certification.

*“From the partnership, we were convinced to be confident to take further steps to apply for FSC since our RIL performance had been considered good enough according to our coach. We have been working together for quite some time, and our success in obtaining FSC certification was one of the best results from that partnership”* (anonymous respondent).

Although RIL had been introduced prior to engagement with the FSC and was not a new system, significant findings in criterion 6.5 were still identified in over 82% of observed FMUs. This raises the question as to why this is still the case. TFF reported that they did not conduct routine RIL audits of FMUs under their programme, so the extent to which RIL was adopted

by the concessionaires is still unknown (TFF Indonesia, 2016). Despite the variation in cause, some common reasons argued by Klassen (2002) may be worth considering:

- lack of tenure security
- ineffective government regulations and enforcement
- excessive costs and lack of clear financial benefits
- lack of serious intent.

Low compliance of FSC RIL standards can also be attributable to the state regulation that was found to have a lower standard. A comparison of RIL government rules with TFF RIL standards (mostly used by the natural forest concessionaires in Indonesia aiming for FSC certification) showed that compliance with the national regulation was only 23% of the TFF standards (Ruslandi et al., 2014). These differences in the state standard may also cause a lack of serious intention by the companies to implement a high RIL standard since it is a voluntary standard. There is no law enforcing companies to implement such a high RIL standard consistently, unless they definitely require FSC certification. In addition, the lack of clear, direct financial benefits in the short term can also be one of the reasons that a high standard RIL was inadequately implemented. As one of the responding experts suggested that the benefits of implementing RIL could not be instantly and directly achieved because it was more like a long-run investment in sustainability (K. Musthofa, personal interview, June 12, 2018).

### 5.1.2 CARs according to sustainability pillars

This research shows that the majority of the CARs were related to the environmental pillar. Weak implementation of the criteria under this pillar could be related to factors such as the high cost of compliance (e.g., RIL and HCV assessment). The HCV assessment remains expensive because of the high demand for that assessment and the limited availability of consulting firms in Indonesia (K. Musthofa, personal interview, June 12, 2018). In addition, it is not compulsory to undertake this assessment for the mandatory certification scheme in the country (e.g., PHPL). The findings of this research were in line with the results of an assessment of the impacts of the FSC certification conducted by Claros et al. (2009). While they expected that the social aspects would be the major problem, they eventually found that problems relating to the environment were the main issue in the tropics. The fewer social issues experienced by these FMEs could be related to the following factors. Firstly, the external social

issues may already have been resolved before the certification was pursued, especially considering that most of the concessionaires were not new FMEs. Secondly, fewer social issues may come as a result of changes and developments in policy instruments that better recognised and addressed the rights and responsibilities of communities around the forest as well as tenure issues. However, internal social issues could be more significant given that the percentage of social problems was quite large (40%) within the sustainability pillars. Moreover, the result of this study is also similar to findings in a review of PHPL impacts carried out by Maryudi et al. (2017). The CARs review found that ecological aspects were scored lower than other criteria including production, social and main precondition. Despite FSC and PHPL standards being different in terms of criteria and indicators, it seems that, in general, concessionaires encountered challenges in managing the environmental aspects sustainably.

In short, given the assumption that forest concessionaires already addressed all the issues/CARs identified in the main FSC audits (at least before the first surveillance audit), certification contributed to the improvement of forest management in all sustainability pillars. These positive impacts can be even more sustainable by considering the appropriate monitoring and planning that has been incorporated within the FSC standard.

### 5.1.3 Factors affecting the number of CARs

Although bigger FMUs could have more management complexity, greater financial resources and a better ongoing forest management system, findings in this research did not suggest that these factors determine the number of issues found in the main audit. Instead, the number of CARs seems to reflect the level of readiness of FMUs for FSC certification, which needed to be vertically and equally integrated from the top levels of management to the field workers. The top management level should be ready in terms of the costs incurred and changes required to the company's internal policies, while the forest level workers should also be ready in terms of implementation. The top management commitment is the first important criterion that needs to be met by the companies before the external organisations can do further coaching related to FSC certification (K. Musthofa, personal interview, June 12, 2018).

Also, this study shows that there has been no improvement in forest management over the last few years (specifically 2011 to 2018), indicating that there are serious issues related to precisely what the FMUs have learned over this time. This finding, however, contradicts the finding by Claros et al. (2009) who found that the number of CARs decreased over time

indicating a better understanding of forest management in the tropics. The lack of improvement in forest management according to FSC standards may be attributable to a range of factors including the current government regulation. If the government regulation relating to natural forest concessionaire management does not improve and continues to deviate significantly from the international voluntary standards (e.g., FSC), the management within the FMEs will also likely continue to be inconsistent. Therefore, the failure or inability to meet the FSC standard would continue, unless a harmonisation scheme with all relevant in-country legislation (especially PHPL) was developed.

## 5.2. Motivations, costs, advantages, challenges and disadvantages in FSC

### 5.2.1. Motivation for certification

#### *5.2.1.1. Motivation towards certification*

The strongest motivation for gaining certification was to access a wider market, with the understanding that FSC certification would contribute added value and thus attract new investors. This economic motivation seems to be a common reason for business actors, as reported by Ruslandi et al. (2014), indicating that expectation of market benefits and returns on investments related to certification were apparent from the concessionaires. In Romania, economic advantages were also the most frequent motivation indicated in the forest districts survey (Halalisan et al., 2018). Through this motivation, producers showed that they wanted to expand their markets for recognised FSC-certified woods (e.g., Europe and North America). Such a reason can also be associated with their business strategy, because having FSC certification would make them less dependent on one market and give opportunities to explore other markets, since FSC has a wider global acceptance.

Other important certification drivers were the intention to have a better forest management system, to refine the company's profile, obtain a price premium and become more competitive in the related industry. That the motivation of adopting better forest management was considered important indicates the increase in awareness of responsible forest management practice. This finding also supports the study on global drivers of FSC carried out by Sargent (2014), which found that the increase in awareness related to a country's openness to conservation programmes, including UN-REDD, stimulated the adoption of FSC. This circumstance may be relevant because Indonesia is one of the countries where many global

conservation programmes are carried out. In Cameroon, the high uptake of FSC was also attributable to the high awareness of certification benefits from logging companies (Nukpezah, et al., 2014). Motivation for refining public image explains why these FMUs considered the global reputation of FSC helped to improve the business's image, especially within the global forest industry. In Indonesia, FSC had a good branding image among forestry stakeholders and hence became the most preferred for forest certification (Pratiwi et al., 2015). Also, having an improved public profile would also be critical because of the severe historical deforestation and degradation issues faced by Indonesia back in the 1990s. During that period, forestry companies were frequently accused of destructive and unsustainable logging practices. All these motivations show that the sustainability trend has had a significant impact on core business strategy in the forestry sector.

Utilising foreign funds was found to not necessarily be a reason to get a forestry operation FSC-certified, although the fact that the number of FSC-certified forests in Indonesia grew significantly since the presence of IDH around 2011 is interesting to note. This may come as a result of various conditions. Firstly, this motivation might be weakened by the fact that various forestry projects and programmes related to forest certification already existed (Ruslandi et al., 2014), before IDH and TBI were present. However, these SFM-related projects were scattered and not particularly well focused on certification, according to Permadi as the TBI programme director (personal interview, 28 May 2018). Secondly, this motivation may be only considered majorly important by medium or small FMUs that still have significant financial constraints towards FSC certification.

Overall, it is clear that economic motives were the most important internal drivers for certification from the business actors. While that motivation seemed dominant, the result suggests that these motivations were also positively complemented by a motivation to implement better forest management, showing the increased awareness of sustainability through certification.

#### *5.2.1.2. Achieved expectations at the forest levels*

Much previous research on FSC impacts acknowledged the improvement in forest management, and this study also reports a strong result in recognition of this. This result indicates that certification holders perceived that enormous changes had taken place in many aspects of forest management especially when the gap with business-as-usual practices was

evident and when improvements were visible in the field (e.g., the establishment of more appropriate harvesting camps, health and safety equipment, and medical facilities).

The second most achieved expectation concerned the company's public image. This result suggested that companies can be more confident in their sustainable business practice when they are FSC certified. Companies are usually more welcoming of any activities from external parties (e.g. buyers and researchers) regarding their forests or facing public complaint/disputes after the FSC certificate was granted (L. Puspita, personal interview, 3 September, 2018). The credible image of FSC is clearly an important criterion in helping to implement SFM. This result supports a previous study carried out by Pratiwi et al. (2015) that reported FSC was the first preference for certification systems by forestry stakeholders in Indonesia in terms of the quality of the standards.

The expectation to increase an FME's competitiveness, gain broader market access and a premium price were achieved at a limited rate, indicating that such economic impacts might be either difficult to achieve or the information about such effects might be less well known and understood at the forest level. The less tangible benefits at the forest level have also been reported by many previous researchers such as Harsfield and Ostermeier (2003) who suggested that FSC certification served management accountability well but satisfied land owners less well in regards to the overall economic benefits. At the same time, information about these benefits may be less well understood by forest level teams where the survey was carried out, given that many of the responding FMUs were vertically integrated corporations that did not make direct contact with buyers.

#### *5.2.1.3. Decision to continue certification*

The results indicate that the majority of certification holders were very enthusiastic about continuing certification. It can be inferred that this voluntary certification remains attractive and rewarding for most of the companies, although further considerations should be taken into account. Similarly, the forest firms in Brazil showed a positive intention to recertify, although they demonstrated moderate satisfaction level with FSC certification (Araujo et al., 2009). The positive willingness to keep certification is also understandable because the ongoing efforts will not be as demanding as during the first certification process. Besides that, maintaining the certification generally requires lower costs compared to the initial process as long as they can continue to implement the standard in the right way. The results also suggest that the

certification advantages perceived by the FMUs had elevated their awareness of sustainable forest management and the consideration outweighed monetary benefits that were not entirely or fully satisfied. Meanwhile, a few companies remain uncertain about continuing certification, showing that certification might not really be necessary for their particular markets or FMEs might instead have prioritised their profit margin.

## 5.2.2. Implications of certification costs to the companies

### 5.2.2.1. *Estimated certification cost*

Comparing the cost of certification with the costs reported by other studies could be complicated because different methods were used when calculating the costs. Ruslandi et al. (2014) estimated that the total cost of certification (internal plus externally provided by the donor) in five concessions in Indonesia was US\$4.76/ha. Meanwhile, in this study, the range of certification cost estimated by the FMUs (assuming funds from the donor are excluded) ranged from less than US\$2/ha to US\$7/ha, and the cost which the majority of companies selected was in the range of US\$2–5/ha. This result falls within the suggested certification cost by Simula et al. (2004), ranging from US\$3 to US\$32/ha in the analysis carried out in Brazil, Indonesia and Malaysia. This result shows that cost can vary and be affected by a range of factors. The nature of forest management conducted before engaging in certification was one of the factors affecting the cost of certification (Simula et al., 2004). The lower estimated cost in this study in comparison with the study by Simula may indicate that forest management before certification is better now than in the situation in 2004. In addition, the certification that companies first undertook before FSC could also reduce the cost, such as the PHPL certification, which most of these companies were certified with before FSC.

In short, the estimated cost within this research could be used as a general cost reference for FSC certification in Indonesia, because these concessionaires represented more than 40% of FSC certification holders of natural forests in Indonesia in 2017.

### 5.2.2.2. *Cost and FMU size*

Costs and FMU size generally have an inverse relationship where larger companies required a lower cost per hectare than the smaller ones, as suggested by many studies, including a review of certification cost in developing countries by Durst et al. (2006), in the Americas (Cubbage

et al., 2009) and in Indonesia (Ruslandi et al., 2014). In addition, larger firms could have a better forest management system, hence aligning the ongoing system with FSC standards might require less effort and expense (Cubbage et al., 2009). In contrast, this research found that the average certification cost (US\$/ha) for FMUs with an area less than 100,000 ha (small and medium FMUs) can be quite similar. Meanwhile, as the area increases beyond 100,000 ha (large FMUs) the cost of certification is likely to increase. Surprisingly, this research indicated no statistically significant relationship between the size of FMU and cost required for certification. It could be that the small sample size of the survey made it difficult to find a statistically significant relationship. More sampling in similar future research is therefore clearly needed and recommended so that the result can be more accurately represented.

It seems that some cost items can be influenced by the size of FMUs, especially the fixed costs such as costs for audit and baseline assessments. Forest area will determine the scope of audit, hence incurring a higher audit fee. At the same time, the cost charged by CBs can also be influenced by whether the companies have been subject to controversy in the public sphere regarding their practices (L. Puspita, personal interview, 3 September, 2018). The extent to which the company was the subject of controversy had a significant impact on the audit fee, and generally, bigger companies attracted more controversy than the small enterprises.

#### *5.2.2.3. Cost elements towards certification*

This research identifies that the most important cost element was related to the compliance with health and safety standards. This result correlates with the previous analysis in which the health and safety issue was the most frequent problem found in the main FSC audits. The required costs were high concerning this element, because it related to infrastructure and equipment procurement such as helmets, safety boots, gloves, appropriate housing and medical facilities.

The second most important cost element was related to infrastructure development and audit costs. Infrastructure development can be costly because it encompasses many aspects including RIL and environmental protection (for instance, fire systems, signboard installation, and construction of culverts). Meanwhile, it is very interesting that the audit cost was also seen to be the second most important item even though it could be covered by the donor. This result needs to be considered with the ongoing requirement for companies to undertake an audit annually; however, the financial assistance lasts only until the second year of monitoring and



can also be allocated for other certification-related activities. Thus, concessionaires cannot rely entirely on the donor fund to cover that cost of audit and maintenance (e.g., surveillance audit costs). Furthermore, the audit cost can depend on the CBs they used for FSC assessment.

Increasing staff in the forest enterprise as part of FSC standard compliance was rated as the lowest level of importance. This result shows that the number of staff was already sufficient before the certification. Although working in a rural area may be found challenging and undesirable, recruiting staff may not have been regarded as difficult and may not have incurred significant cost because forestry schools were available in the area where companies operated.

Finally, obtaining a more accurate assessment of cost items towards FSC certification may be challenging, especially from concessionaires that have been certified for a long period of time, because tracing the financial data may be difficult, especially from the pre-certification period.

#### *5.2.2.4 Funding support from donors*

This study found that the range of costs given by a funding agency for certification-related purposes was US\$1–3/ha (Figure 13). This result corresponds with the funding range supported by TBI, which was a maximum of US\$3/ha. The comparison of costs for companies and funding by the donor indicates that, generally, companies contributed a higher amount than the amount provided by donor funding (given the assumption that companies' costs were accounted for in the companies' own internal budget, excluding expenses paid by the donor). This result is not in line with the support scheme by TBI where enterprises were expected to fund only half of the total cost of certification (TBI, 2013). Unfortunately, total cost towards certification (internal company plus externally received fund) cannot be predicted since the funds from the donor were intended to cover certification-related expenses not only until the certificate was granted but also until the second year of certification maintenance. But, overall, it seems that FMUs should allocate more budget than the donor funding if they want to achieve FSC certification. On average, the comparison implies that larger FMUs can obtain more financial assistance than the medium and small FMEs.

The way this fund was used indicates that the donor scheme looks at the items that are not present regularly in the company's annual budget plan, such as items other than infrastructure and equipment to support operational activities. Furthermore, the donor support

scheme also seems to consider the short-term sustainability of certification, because the support can be managed to cover the cost until the second surveillance audit.

### 5.2.3. Advantages of certification

#### *5.2.3.1. Advantages to general forest management*

Logging companies expected that certification would significantly benefit the social (health and safety) and environmental (RIL and biodiversity conservation) aspects. This result assimilates the finding in the CAR assessment, emphasising that these aspects were considered to be the major problems by the natural forest licence holders. Interestingly, the economic advantages, especially a price premium and wider market access, were rated as being of lower importance and were not as important as indicated in the initial motivation to become certified (Figure 18). The certified FMUs may be less optimistic about the economic benefits, as found in research by Trishkin et al. (2014). This result also demonstrates that benefits in social and environmental aspects were more highly prioritised and expected. This situation also may show the changes in the mindset of the land managers about certification along with the certification process.

The lowest level of importance placed on improved transparency and stakeholder participation suggests that either such benefits were deemed to be not very critical or concessionaires were confident enough that they had facilitated such benefits prior to the certification. Transparency and stakeholder participation may correlate with the need for the companies to allow the public to oversee and contribute to sustainable forest management practices to prevent pressures from outsiders. The result can also indirectly explain why the pressure may not occur at the field/forest level; the pressure may occur at the industrial level, echoing a suggestion by Ruslandi et al. (2014) that most of Indonesia's concessionaires were isolated from market pressures and signals because forest product sales were controlled by the industrial division under the same corporate group (in which, for this study, most of the responding concessionaires had their corporate industries).

#### *5.2.3.2. Achieved advantages at the field level*

This research found that most of the certification advantages related to social and environmental aspects within forest management were achieved at the forest level. Improved

employee capacity, better biodiversity conservation and environmental protection were agreed to be achieved in all participating enterprises. The increased capacity of staff may be as a result of assistance by the coaching organisation to each FMU. In Indonesia, most of the concessionaires heading to FSC certification were coached by an external organisation such as TFT, TFF, WWF, and TNC. In addition, it is also clear that certification has a strong result in regard to environmental management aspects, indicating its basic role as a conservation initiative.

At the global level, an FSC global market survey in 2012 also reported a similar result, in which the general impacts on environmental and social aspects were significant and agreed to by most of the certification holders. The brief FSC global market survey results in 2012 are displayed in Table 18 (FSC, 2014).

*Table 18. Agreement of respondents with general statements about impacts of certification*

| Do you agree with the following statements about the general impacts of FSC certification?                  | % of respondents in agreement |
|---|-------------------------------|
| With the certificate, it becomes transparent that products are from well managed forests.                   | 93.7%                         |
| Certification helps to maintain biodiversity in managed forests.  | 89.9%                         |
| Certification helps to increase the environmental value of forests, while not ignoring the economic values. | 89.8%                         |
| Certification helps to ensure protection of threatened species in the managed area.                         | 89.0%                         |
| Certification helps us to fully use the economic value of forests balanced with other values.               | 83.8%                         |
| Certification supports small and community forest users to be better respected.                             | 82.9%                         |
| Certification has a positive impact on workers' health, safety and other working conditions.                | 78.8%                         |

FSC Global Market Survey 2012, completed by 4,595 forest management and chain of custody certificate holders

At the same time, the economic advantages, particularly regarding a wider market access and a price premium, remained less attainable at the forest level. This result can be associated with factors including the type of market. FMUs with integrated industries may obtain limited economic benefits because they sell the logs to the internal market within their own corporate industries. That situation prevents them from understanding the wider market situation and setting the log prices. Also, they may not understand well the information about economic

benefits that is handled by the corporate industry. On the other hand, FMUs that directly communicate with buyers might find it easier to understand the associated economic benefits.

In addition to the market access, while the questionnaires did not ask for the advantages facilitated by FSC, an interview with FSC Indonesia representative has revealed that FSC can help in linking the concessionaires to the potential markets, but it is still limited to a case-by-case basis (e.g., subject to the request from the FMUs and their emergence to access the new markets). Nevertheless, this facilitation is rarely used because most of the FMUs already have their loyal and long-term market (H. Prabowo, personal communication, May 23, 2018).

### *5.2.3.3. Economic advantages of certification*

#### *5.2.3.3.1. Premium price*

Premium price was one of the most attractive benefits especially for producers applying for certification. This research revealed that not all participating companies fetched a premium price for their certified logs and the range was 0–20%. This range was obtained without classifying the species of wood; however, most of the surveyed companies harvested Meranti (*Shorea sp.*) and Keruing (*Dipterocarpaceae sp.*) that are processed into plywood in the local industries. Although studies on a price premium from certification were considerable, framing them into this study is somewhat complicated, particularly regarding the exact price premium that was obtained.

Firstly, most of the studies about the price premium were for processed products not for the logs. The secondary or end-use forest products tended to get a higher price from being certified (Nebel et al., 2005). For instance, a price premium for certified products was greater at 5–51% in Bolivia for exported wood products (Nebel et al., 2005). Secondly, the price premium in this present research was for local markets, because exporting logs has been banned under a government regulation. On the other hand, exporting logs can reach a better premium price as overseas markets value FSC products more highly. Kollert and Lagan (2007) found that the premium price ranged from 34% to 77% for exported products and from 5% to 44% for lower quality timbers in Malaysia.

The result strongly suggests that FMUs selling their logs to external markets will likely get a price premium (Figure 27); however, and surprisingly, the statistical analysis found no significant relationship between those market types and achieving a premium price. This could be associated with the small sample size, which might impact on the statistical analysis in this

study. In the case of integrated enterprise, the processing industries seem to have more opportunity for a price premium as they interact directly with the buyers and have processed products. The failure to achieve a price premium shown in this research reinforced the notion that this monetary benefit was rarely achieved at the forest level. The case in other tropical countries seems to be the same. For instance, there was a lack of price premiums for certified products in Argentina and Chile (Cubbage et al., 2010).

In another perspective, a premium price could also correlate with the market destination and condition of buyers such as the level of consumer income and awareness. If the market for certified forest products is already well developed, there would likely be a smaller price premium but more market demand (K. Musthofa, personal interview, 12 June, 2018). At the moment, most of the well-known FSC markets are in Europe and North America. The FSC products tend to be more highly valued in those countries. Reaching out to this market may be not be viable at the moment for Indonesian products, as suggested by Ruslandi et al. (2014), because the shipping cost is high to these countries, whereas the traditional market for Indonesian plywood, as one of main products from natural forest concessions, pays at a competitive rate (e.g., in Japan). Furthermore, the level of income from the customer would also significantly influence the higher price for certified wood products (Aguilar & Vlosky, 2007). At the society level, as income increased, the demand for environmental amenities would also increase due to citizens showing a greater degree of awareness (van Kooten, Nelson, & Vertinsky, 2005).

#### 5.2.3.3.2. Additional sales and ease of selling logs

This research also found that additional sales obtained by the concessionaires ranged from 0% to 40%. However, the number of enterprises achieving additional sales was very low, indicating that this benefit was still very limited. The ability to increase sales may be associated with a range of factors. For instance, sales can be related to the current level of harvest. It might be difficult to supply the new demands if producers have already cut the maximum allowable quantity to satisfy the current customers (unless they harvest below their approved plan). At the same time, obtaining information about sales after certification may also be difficult because it is associated with the company's tangible benefits.

The impact of certification on the ease of selling logs was also still limited, since a significant number of participating FMUs reported no difference between pre- and post-certification. This finding could be a result of no change in the number of buyers after the

certificate was granted. Furthermore, FMEs supplying to their corporate industries may also find it difficult to measure this impact, since they are isolated from the direct buyers. On the other hand, a few FMUs reported that certification had made selling logs easier, suggesting that certified product could have wider market acceptance.

#### 5.2.3.3.3. Other benefits of certification

The certification benefit of eliminating external pressure had an impact with only a few companies. This impact might only be perceived by big or controversial companies that tended to appear in media spotlights and receive complaints more often than small enterprises. Besides, complaints from external parties may be limited because of collaborations with other big international NGOs (e.g., WWF, TFT, TFF and TNC), either for various projects before committing to FSC certification or certification coaching. The coaching organisations and funding agency could help the FMEs to counter public or external complaints (I. K. Permadi, personal interview, 28 May 2018).

Next, most of the companies argued that no external recognition was obtained after being FSC-certified. Taking into account that FSC is a voluntary certification scheme, and that government mandatory standards also existed, the impact of certification in this area may be limited in the national context. Nevertheless, APHI as an association played an important role in bringing this impact to the concessionaires. For instance, APHI rewarded the concessionaires with best management practice and can be a contact to channel research opportunities and internal conferences related to SFM to these concessionaires.

Finally, whether the certification cost outweighed the perceived economic benefits remains uncertain. The uncertainty shows that either costs or benefits are difficult to quantify or that there were indeed limited economic benefits obtained at the forest level. In addition, because most of the concessionaires wanted to gain recertification, the uncertainty may show that the producers still expected that the cost would be outweighed by the benefits in the future. Hence, certification holders may not fully believe in the short-term benefits of certification, but they seem to expect positive effects in the long run in all areas of forest management especially in the economic aspect.

#### 5.2.3.3.4 Economic benefits facilitated by the donor

The funding agency clearly played an important role in supporting these concessionaires to obtain FSC certification by addressing the financial and capacity constraints, yet conditions were imposed as to the particular items and amounts. While the final goal for the donor was to increase the number of certified areas showing secure sustainable sources, what happened after the collaboration ended was mainly in the hands of the FMUs and markets. Nevertheless, this study recognised that IDH and TBI managed to provide opportunities to bring together producers and buyers through the annual trading expo. Given that only six companies considered that they obtained benefits from such an event, this result indicates that either the trading expo had a low impact on their business or they had less demand for Indonesian certified products. In addition, it is likely that the FMUs already have regular/loyal customers/markets, taking into account their years of operation, hence new buyers were not necessary. At the same time, FMU teams (particularly companies with vertically integrated industry) may not participate in the expo but the industrial division teams did, and hence economic benefits in this context were considered weak and unachieved. Moreover, the role of the donor in improving the company's public profile was considered impactful. This explains the important role of using publications and events to reach out to the public to promote the SFM practice carried out by the concessionaires.

#### 5.2.4. Challenges related to FSC certification

Transforming staff attitudes to follow the new improved system created by certification standards was considered the most difficult challenge. The new system might cause more work and procedures and so must deal with transforming the old mindset and culture of the employee, especially for those with low educational background and with people of advanced age. Changing staff attitude was also reported as one of the biggest challenges by Ruslandi (2015). Hence, it is critical for the company management team to build a good relationship with their employees and keep them motivated. To encourage the staff to obey new company policies and work according to the new system can be done by building a good relationship (K. Musthofa, personal interview, 12 June 2018). An example would be giving an incentive if the certificate were achieved. It seems that this challenge lessened in significance after certification, showing that FSC standards contributed to changing staff behaviour through the improved system.

The second most difficult certification challenge was related to certification cost. Ruslandi et al. (2014) suggested that the cost to implement FSC standards was the main barrier in Indonesia. Similar research by Dauvergne and Lister (2010) echoed that the cost of certification remained a significant challenge in developing countries. As the challenge turned out to be easier (neutral level) after the certification, this result can be associated with the financial support obtained from the donor to cover some of the costs incurred by the certification process. The cost may remain challenging for FMUs, especially small FMEs, because they still need to bear the monitoring and audit costs in the future, particularly if the monetary benefits of certification cannot compensate for the cost of maintaining certification.

Looking for other financial source is important in addressing the issues on certification cost such as obtaining a loan from the domestic banks. However, in the context of the Indonesia forestry business, this remains challenging especially for natural forest concessions for several reasons. Firstly, the available government financing source is only for community or plantation forests, for instance, the BLU, a general service body established by the Ministry of Forestry of Indonesia in 2007. This can also be a result of the strong concern of the government to protect the remaining natural forests for conservation rather than for commercial purposes. Secondly, banks see forestry business as a high-risk investment, because of the potential for tenure issues and natural disasters (e.g., fire) (INFID, 2014). Thirdly, because of the licence type for forest concessions, the land in a natural forest concession could not be used as collateral if companies want to obtain loans from the banks (Sunardi & Mola, 2016). In response to this situation, a sustainability financing regulation has been developed by the government of Indonesia's Financial Service Authority (OJK) in 2017 with emphasis on the importance of maintaining the balance between social, economic and environmental factors. In this context, FSC certification has the opportunity to play a strategic role by being a guarantee of sustainable business practices for a potential buyers or banks. However, the lack of economic benefits at the forest level should be addressed first to put FSC certification fully ready to play this role.

Unsustainable logging practices (found to be the most frequently mentioned issue in the main audit) interestingly rated neutral, indicating that these FMUs were confident enough of their RIL practice before certification. This condition can be a result of the existence of collaboration in RIL projects with other international NGOs since before they entered the certification phase.



Although forest protection (from fires and illegal activities) was found to be the least difficult challenge prior to certification, that challenge remained at the same difficulty level after certification. FSC certification seems to have little impact on this area because it was influenced predominantly by the environmental conditions and by law enforcement, which are both difficult to control. Most of the forest concessionaires in Indonesia are located near the equator, which means high temperatures and susceptibility to stronger El Niño effects. Therefore, although a high mitigation standard was already in place, it may still be challenging to control fire spots that can cause forest fires. At the same time, illegal activities were also difficult to eliminate without strong law enforcement, because local communities were often involved. In conclusion, challenges remain even after the certifications have been granted. Although the results imply that these challenges all levelled off, social and economic aspects were noticeably strong before certification.

#### 5.2.5. Certification disadvantages

Interestingly, the audit cost was found to be the most significant disadvantage of certification, even though the donor can cover this item. This may reflect concessionaires' expectation that the audit cost could be paid by the donor beyond the second surveillance audit, as mentioned by one of the responding companies:

*“We expect the financial assistance can be longer as we feel that the monetary benefits were not fully obtained at the forest level”* (anonymous respondent).

The time required and preparation costs were also important disadvantages of certification. This result shows that getting certified was not instant, but a time-consuming and costly process, especially if the gaps of existing management practices towards attaining FSC standards were significant. This finding incorporates the data that the majority of the companies spent more than two years to prepare and obtain their FSC certificate. Furthermore, the commitment of concessionaires concerning the budget and required changes can also determine whether these gaps of management practices can be easily closed in a short or long time. This result demonstrates that the cost is still significant although financial assistance was given and may not be fully compensated for by the benefits. These disadvantages were also similar to the disadvantages of certification found by Schreiber (2012) in the United States.

Other disadvantages seem to be less critical for concessionaires, showing that the circumstances (e.g., too much record keeping and too much science and consultations) were

not a problem for the FMUs. This result shows that, apart from costs and time issues, other certification-associated effects were perceived as a positive change by the certification holders.

### 5.3. Case study: Perspective on FSC certification process and suspension in PT KLIA and PT BIOS implementing group certification and operating in natural mangrove forests

#### 5.3.1. Certification in PT KLIA and PT BIOS

External organisations played an important role from the introduction to the implementation of the high SFM standard regarding certification in KLIA and BIOS and it is clear that both sides benefited from this certification programme. Both enterprises benefited from the coaching and funding to upgrade their forest management practices, and the supporting organisations made use of the FMUs as their programme implementation area.

The drivers of certification were a combination of the strong internal company intention to promote a sustainable business in mangrove forests and a conservation mission from the external parties. The internal driver is a very common resonating motivation of other forest concessionaires, as pursuing certification was part of their strategy to explore new markets (Ruslandi, 2015). Understanding that market demand was not the primary driving force for these companies (PT KLIA and PT BIOS) to pursue FSC certification identifies a fundamental consideration, that is, that FSC certification was not necessarily an urgent goal for them, especially considering that their main market was Asia (China, Taiwan, and Japan). On the other hand, the drivers from external organisations were more environmentally focused. The supporting organisations appeared to have a strong interest in achieving certification in order to create the way for more conservation programmes to save the mangrove ecosystem. Given this intention, these external organisations (those involved in the certification of KLIA and BIOS) also wanted to achieve a breakthrough, as these concessionaires would then become the first mangrove companies in the world under the group scheme at a corporate level, to be certified by FSC.

In terms of forest management performance, the result of the main audit was satisfactory (i.e., no major findings were identified) indicating that both companies seemed to readily adopt the certification standard. This result also reflected a good collaboration between the group manager, coaching organisation and group members. Furthermore, applying this group scheme appeared to have additional benefits. For example, both KLIA and BIOS had dual partners

(WWF and APCS) to support and monitor their compliance with the FSC standard. This case shows the importance of having a group manager with appropriate capacity related to FSC standard.

The forest management performance, according to the audit's progress, suggests that a timely improvement took place in these concessionaires. Looking in more detail at the non-conformance aspects, criterion 4.2 infringements repeatedly occurred in all audit stages. For instance, safety equipment was found inappropriate to the task where auditors still found that the workers did not wear a safety jacket or boots with steel tips. The repeated findings in this criterion also reflect the difficulties faced by the concessionaires in dealing with the human aspect combined with challenging environmental condition (e.g., expectations that shoes may be difficult to wear in the mangrove area). Despite the second audit no longer identifying these findings, the length of time needed to close the finding indicates either low capability of the FMUs in addressing the issues or the companies' low commitment to that aspect.

### 5.3.2. Certificate withdrawal drivers

In the case of KLIA and BIOS, FSC certification was suspended due to the withdrawal of those companies as they considered such certification was no longer necessary. It seems that continuing with certification was mostly related to the cost, which in their opinion did not provide any compensating benefits. This withdrawal was driven by a range of internal and external factors.

Internally, the changes in corporate management had led to the withdrawal of one of the group members and disengagement with the woodchip industries. Group member withdrawal was a common event and could be considered as one of the threats in applying a group certification scheme as reported by a group of planters in Vietnam (Hoang et al., 2014). Since the companies were not large, vertically integrated corporations, the access to new markets seemed to be difficult after the disengagement of those companies from the woodchip industries, particularly with their current supply capacity and no processing facilities to add the value of logs. As a result, KLIA stopped the operation and BIOS kept supplying its own charcoal factory but with low-level capacity. Interestingly, the WWF GFTN programme seems to not be able to help link these companies to the new markets because they focused on conservation goals after the certification. Similarly, IDH and TBI did not help address this issue, because during the first phase programme (in which certification in KLIA and BIOS

occurred), the initial goal of forest certification was limited to securing the resources from the producers. This event contradicts the case of group certification in developing countries (e.g., Indonesia and Vietnam) that were successful because of the role of NGOs (such as WWF GFTN, TFT, TFF) in connecting the group with markets that valued certified products.

The costs not compensated for by the revenue (because of no price premium) seems to be the other fundamental factor in causing these concessionaires to pause their business, leading to certificate withdrawal. Initially the group scheme was intended to reduce costs towards certification; however, the level to which the costs were reduced needs further research, specifically at the corporate level. In the case of KLIA and BIOS, the group manager was from an external profit-based organisation, namely APCS. Hence the cost for the certification manager may have been different from the group certification in the community forest managed by a cooperative, as is the most common case in Indonesia. Although it seems that direct costs (e.g., the audit fee) were reduced, the group members still needed to pay an annual membership fee to the group manager. Hence, it might also be worth considering having a group manager from the internal company and association in order to address the issue of group manager cost (I. K. Permadi, personal interview, 28 May 2018), but appropriate capacity of the group manager should be ensured. The ways to compensate for the costs are either from a market incentive (price premium) or increasing production. However, both seemed to be unviable in the short term for the companies, especially regarding production, for the following reasons.

The small area and production capacity limited the capability of the concessionaires to reach bigger markets. This was also because of the manual harvesting technique that relied heavily on human capacity and resources as well as climate conditions and natural phenomena (e.g., tidal flow). Also, unfortunately there is no advanced technology available to assist with the harvesting activities of mangrove concessions. One of the ways identified to increase production is by reducing the number of “mother trees” in the silviculture system through clearcutting with mixed natural and artificial regenerations. This could have been an option to maximise the harvest and is proven to be significant and suitable in other mangrove concessions, such as Matang mangrove forest in Malaysia (Mulia, 2014). Unfortunately, government regulations are still in place which require that harvesting in mangrove ecosystems should leave 40 trees/ha as the “mother trees” to provide a regeneration system. This number was considered significant by the concessionaires. Hence increasing production by transforming the silviculture system was not viable.

From the external perspective, business operation in KLIA and BIOS also encountered threats that were even more difficult to control and manage than the challenges identified above, (e.g., the competition with legal and illegal domestic charcoal industries, significant price difference with the final products, weak law enforcement, and lack of domestic markets). There are many small charcoal factories operating in West Kalimantan with the mangrove woods supplied from local communities. In 2015, the number of charcoal kilns operating in West Kalimantan had reached more than 500 (Ritabulan, 2016). This circumstance restricted the mangrove concessionaires' opportunity to supply the local markets, particularly in West Kalimantan, especially when the price from the community products was competitive. The significant issue relating to the mangrove sold by the communities was that it was mainly from illegal logging activities within protected areas and from concessions, which illustrates the weakness of the law enforcement. The illegal logging is difficult to stop because there is an issue that the activities involved funders coming from local elites and respected people. Therefore, converting mangrove forest status in some areas into community or village forests could be a policy option to help in eliminating the illegal logging conducted by the community (Ritabulan, 2016). Besides this, engaging the communities around the concessions with the business activities of the companies can be a way to diminish the competition with local people and gain local markets.

Another challenging external factor was the inability to directly supply foreign buyers as a result of the government's log exports ban. Therefore, KLIA and BIOS must look at the domestic industries for charcoal or chips especially outside Kalimantan (due to the high competition in West Kalimantan). Unfortunately, it seems that the domestic market is also still limited and supplying other industries outside Kalimantan was not worth the transportation costs, particularly with the current price on offer (no price premium) and harvesting capacity.

Running a mangrove business in this area was also challenged by the significant price difference between logs and the final products such as briquette and wood pellet. While the final products have a good price, the price for mangrove logs or raw charcoal was considered too low. This situation can be associated with two conditions. Firstly, the significant growth of charcoal kilns in this area indicated that there is a considerable log supply regardless of whether they are legal or illegal suppliers. The abundance of the log supply negatively affects the price rate at the domestic level. Secondly, the existence of intermediaries that link the producers to the final consumers (such as for export and national markets) has been considered as playing a role in the pricing scheme. Furthermore, these intermediaries are related to the local political

interest and conditions, and hence cutting the line of the trader chain seems to be difficult. This condition has also been analysed in the case study of mangrove production by Prasetiamartati et al. (2008).

Unachieved economic incentives (e.g., a price premium) may be associated with a range of factors. At first, the lack of a price premium could be due to the market destination of the mangrove woods not being large FSC markets (e.g., Korea and Japan). Secondly, KLIA and BIOS may not obtain this benefit because they sold logs (instead of processed products such as woodchips) showing that a price premium is not achieved at the forest level as most of concessionaires admitted in this present research.

Finally, the interactions between all the circumstances above contributed to the companies' problems in continuing their operation and certification. Unfavourable economic benefits coupled with the changes in corporate management seem to be the key issues jeopardising the sustainability of the business. Therefore, the suspension of the certificate was not about a failure of implementing sustainable forest management practices but more related to the market situation and the organisational management.

### 5.3.3. Certification impacts for KLIA and BIOS

Certification had brought various positive impacts to these concessionaires, particularly in regard to environmental considerations. This can be related to the fact that the mangrove ecosystem was one of the rich but fragile resources, hence there would be a demand for more robust conservation efforts. The commitment of the companies to set aside 27% of the area as a purely conservation zone was one of the features that conveyed the significance of the environmental impacts along with the certification process. That figure can be considered generally high in comparison with area management for plantation forests, which was regulated to have a minimum of 10% for conservation/protection area. The certification has also called for greater conservation efforts from the companies that are taking the lead in enormous conservation projects and research, either at the concession or landscape level (e.g., corridor conservation projects, multi-stakeholder landscape management agreement, silvofishery, landscape tourism management planning). These activities also strengthen and improve the relationship of the companies with local NGOs and surrounding communities.

Both companies have an excellent environmental condition, as a result of certification, that has also become an interesting feature for tourism (both national and international). While

the integrated tourism management plan is underway, it seems that this scheme will likely become less viable in the near future because the distance of the concessions from the mainland was considered to be too far away and incurred a high transportation cost. Nevertheless, this type of management option may show promise, particularly as certification for ecosystem services has started to expand. That KLIA and BIOS were invited to participate in various national and international forums shows that FSC had increased the profile of the companies. The success of FSC certification also paved the way to Indonesia's mandatory certification scheme. In 2015, KLIA was awarded PHPL certification with a good score and was followed by BIOS in 2016. The FSC standard had made it easier for concessionaires to comply with the PHPL standard since most criteria and indicators were similar or even higher (F. Mulia, personal interview, June 22, 2018). Being FSC-certified became a point of interest for the companies to attract new investors or buyers. For example, KLIA obtained a business offer from foreign industries to supply mangrove logs; however, the offer was not taken up due to the limited production capacity.

The social impacts (both internal and external companies) are in line with the public summary analysis within this research, which emphasised the remedial actions required for health and safety issues. Internally, certification has reformed the working conditions for the employees both in the form of knowledge and physical facilities. Externally, certification facilitated the involvement of local communities such as in the development of silvofishery programmes and collaborative patrols. Mangrove had significant social-economic values as suggested by a large body of researchers, thus, KLIA and BIOS could have had more social impact because they had broader opportunities than other terrestrial forests, especially in regard to its non-timber forest products. Unfortunately, company programmes that involved the surrounding communities were still limited and less well explored by the companies although important to reduce illegal logging. On the other hand, cooperating with the local communities may be challenging as the companies' locations (especially BIOS) is too far from the mainland and villages.

In conclusion, although the impacts discussed may not be fully and directly driven by the certification, FSC certification nevertheless paved the way for these benefits. The significant increase of management performance by 40% according to FSC standards also shows that the certification positively impacts overall management aspects in these mangrove forests.

## CHAPTER 6

# CONCLUSION

### 6.1. General conclusion

There are positive and negative impacts associated with FSC certification. On one hand, the standards have helped to identify the issues and improve forest management practices of logging companies. FSC certification has refined the relationship between companies and their staff, forced better logging practices, and increased the public profile of the concessionaires. On the other hand, it has incurred high costs to comply with the standards and taken a certain length of time. Furthermore, the monetary benefits may be limited. Although the donors have helped to address the issues of certification costs, the conservation initiative is still a market-driven mechanism that is not yet entirely optimised. Thus, some of the potential and motivating economic advantages are not being achieved, especially for small-forest enterprises. For greater impact, there is a promising opportunity to develop FSC certification to obtain a sustainable financing source for enterprises in the forestry sector. Meanwhile, the spirit to continue implementing the high standard of SFM through FSC certification remains strong, showing that logging companies still hope for better green markets in the future and have a greater sustainability mindset.

### 6.2. Specific conclusions

Specific conclusions for each research objective are as follows:

1. Social (health and safety) and environmental (RIL) issues were found to be the most challenging aspects at the concessionaire level. That FSC standards far exceed the related government regulations is one of the difficult factors. Environmental management was the most frequently raised issue in the main FSC assessment.
2. Forest concessionaires perceived the impacts of certification to have various levels of importance, but some conclusions are:
  - 2.1. The range of certification cost found by this research is from less than US\$2/ha to US\$7/ha. Meanwhile, the donor provided US\$1–3/ha. The most important items associated with the cost of certification are to comply with health and safety and environmental standards.
  - 2.2. The most important advantages of certification were perceived by the concessionaires to be on the social (internal) and environmental aspects, which



became the most frequently mentioned issues at the concessionaire level. In addition, the company profile was improved by certification. Monetary benefits including price premium and additional sales were estimated to be in the range of 0–20% and 0–40% respectively by the certification holders, showing a lack of incentives at the producer level where, unfortunately, the most significant costs incurred.

2.3. Certification diminished the challenges in forest management, but difficulties remained after certification, because certification is a continual process and forestry is a long-term business dealing with natural resources and communities. The raising of staff awareness and the cost to maintain certification were among the persistent challenges in the pursuit of this voluntary certification. The uncompensated expense is still a considerable drawback, which could have been even worse without the external support. Hence financial aid will be still required until the markets favour the sustainable forest products.

2.4. The high audit and maintenance cost and time required in the process of certification are possibly among the most important disadvantages of certification for the concessionaires. Fortunately, other certification-associated effects in the technical process and systems were considered as positive improvements in managing the forests

3. The case of KLIA and BIOS illustrates the unsuccessful experiment of group certification at the corporate level rather than unsustainable business practices. The main factors in the withdrawal of FSC certification were the changes that occurred in internal management and the difficult situation in domestic charcoal markets. The experience of KLIA and BIOS shows that FSC certification for mangrove forests and their products is still not yet feasible at this time, at least for a small and non-integrated enterprise. The external support organisations were also unable to save the situation in KLIA and BIOS because they are not yet focusing the programme beyond certification, especially concerning the signalling to markets. On the positive side, certification has brought significant impacts through commitments to environmental conservation by recognising the fragile ecosystem type where the companies operate.

### 6.3. Recommendations

1. Voluntary certification standards such as FSC should complement and strengthen the existing mandatory government-imposed certification standards, and therefore the development and formulation of a mechanism to ease the adoption of both schemes needs to be accelerated and seriously discussed. This can be a way to reduce the cost of certification and make the technical auditing process more efficient. Related parties (e.g., the government, FSC and concessionaires) should be open to collaboration in supporting this goal.
2. FSC as an organisation plays an important role in strengthening the market linkage mechanism that is still one of the bottlenecks in successful and sustainable voluntary certification. The effort to promote the awareness of certified forest products, especially at the market level, should be increased and optimised as well as FSC needing to help address the financial resource issues, for example by building cooperation with financial institutions. Furthermore, all related stakeholders and trading chain actors should sit together to discuss and formulate the right market mechanism for wood certified products.
3. Further studies in all trading chains should be undertaken to obtain the complete picture of the impacts of FSC certification, especially in developing countries. This will be a useful source to promote FSC from forests to consumers. In addition, a study about the cost after certification needs to be undertaken to complement the certification cost assessment undertaken here.
4. The role of supporting organisations such as IDH and TBI is crucial in addressing the barriers towards certification (e.g., cost and capacity). However, as they have been successful thus far, it is now time to optimise the strategy by approaching the market side. At the same time, the ongoing support of SFM is needed to monitor the maintenance of environmental and social values driven by certification.
5. Companies should identify whether their existing and prospective buyers require FSC certification and whether they have a strong commitment internally to pursue this expensive certification.

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## APPENDICES

Annex 1. Summary of FSC Natural Forest Management Standard (Principle and Criteria) for Indonesia and categorisation for sustainability aspect

| Principle                                     | No. | Criteria   | social | economic | environmental |
|---|-----|--|--------|----------|---------------|
| 1. Compliance with laws and FSC principles    | 1.1 | national and local laws                                    | ✓      |          |               |
|   | 1.2 | fees, royalty and taxes                                    |        | ✓        |               |
|   | 1.3 | international agreement                                    | ✓      | ✓        | ✓             |
|   | 1.4 | conflicts between laws, Principle and Criteria of FSC      | ✓      | ✓        | ✓             |
|   | 1.5 | protection from illegal activities                         | ✓      | ✓        | ✓             |
|   | 1.6 | long-term commitment to FSC                                | ✓      | ✓        | ✓             |
| 2. Tenure and use rights and responsibilities | 2.1 | evidence for use right to the land                         | ✓      |          |               |
|   | 2.2 | local communities maintain control, under they delegate it | ✓      |          |               |
|   | 2.3 | mechanism to solve disputes                                | ✓      |          |               |
| 3. Indigenous people's rights                 | 3.1 | they maintain control, unless they delegate control        | ✓      |          |               |
|   | 3.2 | FM is not detrimental to resources of the group            | ✓      |          |               |
|   | 3.3 | sites of special significance are respected                | ✓      |          |               |
|   | 3.4 | compensation in case of detrimental affects                | ✓      |          |               |
| 4. Community relation and workers' rights     | 4.1 | communities are given employment, training and services    | ✓      |          |               |
|   | 4.2 | health and safety for employees & families                 | ✓      |          |               |
|   | 4.3 | right to organise and negotiate (workers)                  | ✓      |          |               |
|   | 4.4 | evaluation of social impacts                               | ✓      |          |               |
|   | 4.5 | mechanism to solve grievances                              | ✓      |          |               |
| 5. Benefits from the forest                   | 5.1 | economic viability (taken into account 3 aspects)          |        | ✓        |               |
|   | 5.2 | optimal use and local processing                           |        | ✓        |               |
|   | 5.3 | minimise waste (from harvesting)                           |        |          | ✓             |
|   | 5.4 | diversify local economy                                    |        | ✓        |               |
|   | 5.5 | forest services and resources                              | ✓      | ✓        | ✓             |
|   | 5.6 | harvesting regulation                                      |        |          | ✓             |
| 6. Environmental impacts                      | 6.1 | assessment of environmental impact                         |        |          | ✓             |
|   | 6.2 | RTE species  |        |          | ✓             |



| Principle                    | No.  | Criteria  | social | economic | environmental |
|------------------------------|------|---|--------|----------|---------------|
|                              | 6.3  | ecological functions and values   |        |          | ✓             |
|                              | 6.4  | protected areas   |        |          | ✓             |
|                              | 6.5  | reduce impact of logging operations   |        |          | ✓             |
|                              | 6.6  | avoid use of chemicals  |        |          | ✓             |
|                              | 6.7  | waste (garbage)   |        |          | ✓             |
|                              | 6.8  | biological control agent  |        |          | ✓             |
|                              | 6.9  | exotic species  |        |          | ✓             |
|                              | 6.10 | forest conversion   |        |          | ✓             |
| 7. Management plan           | 7.1  | management plan content   | ✓      | ✓        | ✓             |
|                              | 7.2  | periodic revision   | ✓      | ✓        | ✓             |
|                              | 7.3  | training of workers for implementation  | ✓      |          |               |
|                              | 7.4  | public summary  | ✓      |          |               |
| 8. Monitoring and assessment | 8.1  | frequency, reference, and replicability   | ✓      | ✓        | ✓             |
|                              | 8.2  | indicator: productivity, composition changes, socio-economic impacts, economical aspects of company | ✓      | ✓        | ✓             |
|                              | 8.3  | chain of custody  |        | ✓        |               |
|                              | 8.4  | use and implementation of result  | ✓      | ✓        | ✓             |
|                              | 8.5  | public summary  | ✓      |          |               |
| 9. Maintenance of HCV        | 9.1  | define existence  |        |          | ✓             |
|                              | 9.2  | consultation process  |        |          | ✓             |
|                              | 9.3  | measures for maintenance and enhancement, public summary  |        |          | ✓             |
|                              | 9.4  | monitoring  |        |          | ✓             |

## Annex 2. Questionnaires

### Introduction

**Q1** What is your company name?

*Sebutkan nama perusahaan tempat anda bekerja sekarang*

---

**Q2** What is your name?

*Siapa nama anda?*

---

**Q3** What is your position?

*Apa posisi anda?*

- ☐ Managing director
- ☐ Field/forest manager
- ☐ Certification manager
- ☐ Accounting manager
- ☐ Other, please specify

**Q4** How long have you been working with the company?

*Sudah berapa lama anda bekerja dengan perusahaan tersebut diatas?*

---

**Q5** How long has the company been operating?

*Sudah berapa lama perusahaan tempat anda bekerja beroperasi*

- ☐ Less than 5 years/*kurang dari 5 tahun*
- ☐ 5-10 years/*tahun*
- ☐ 10-15 years/*tahun*
- ☐ 15-20 years/*tahun*
- ☐ more than 20 years, please specify/ *lebih dari 20 tahun, mohon sebutkan*

**Q6** What are forest management types managed by this company?

- ☐ terrestrial or inland forests/ *Hutan daratan*
- ☐ natural mangrove forests/ *Hutan mangrove*

**Q7** What market does your company supply to? (the answer can be more than one)  
*Apa pangsa pasar yang di supply oleh perusahaan anda? (jawaban bisa lebih dari satu)*

- ☐ Export/ekspor
- ☐ Local in different corporate group/ perusahaan lain tidak dalam satu grup korporasi
- ☐ Export and local/ekspor dan lokal
- ☐ Local companies in the same corporate group/perusahaan lain dalam satu grup korporasi

**Q8** What do you know about FSC?  
*Apa yang anda ketahui tentang FSC?*

---

**Q9** What do you know about IDH and TBI?  
*Apa yang anda ketahui tentang IDH dan TBI?*

---

**Q10** How long is your working experience related to FSC or other forest certifications?  
*Berapa tahun pengalaman kerja anda yang berhubungan dengan FSC atau sertifikasi hutan lainnya?*

- ☐ less than 3 years/ kurang dari 3 tahun
- ☐ 3-5 years/ 3-5 tahun
- ☐ 3- 5 years/tahun
- ☐ 5-7 years/tahun
- ☐ 7-10 years/tahun
- ☐ more than 10 years, please specify/ lebih dari 10 tahun, mohon sebutkan

**Q11** How long had the company prepared for FSC certification?  
*Berapa lama perusahaan anda persiapan untuk sertifikasi FSC?*

- ☐ less than 1 year/ kurang dari 1 tahun
  - ☐ 1 - 2 years/tahun
  - ☐ 2- 3 years/tahun
  - ☐ 3-4 years/tahun
  - ☐ 4-5 year/tahun
  - ☐ other, please specify/lainya, mohon sebutkan
-

**Q12** What certification procedure do you implement?

*Skema FSC sertifikasi apa yang perusahaan anda implementasikan?*

- ☐ Single certification scheme/ *skema sertifikasi single* (FSC-FM/CW/COC)
- ☐ Group certification scheme/*skema sertifikasi untuk grup* (FSC-FM/CW/COC)

**End of Block: Introduction**

**Start of Block: Motivation and challenges towards certification/*motivasi dan tantangan sertifikasi***

**Q13** Rank below motivations/expectation to gain FSC certification

*Berikan penilaian terhadap motivasi untuk mendapatkan sertifikasi berikut*

| motivations   | not<br>important/<br>tidak<br>penting | somewhat<br>important/aga<br>k penting | neutral/<br>netral    | important<br>/penting | very<br>important/sanga<br>t penting |
|---|---------------------------------------|--|-----------------------|-----------------------|--------------------------------------|
| to gain more market access/ <i>untuk mendapatkan akses pasar yang lebih luas</i>  | <input type="radio"/>                 | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                |
| to gain premium price/ <i>mendapatkan premium price</i>   | <input type="radio"/>                 | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                |
| to improve public image/ <i>peningkatan image publik</i>  | <input type="radio"/>                 | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                |
| to have a better forest management/ <i>untuk pengelolaan hutan yang lebih baik</i>  | <input type="radio"/>                 | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                |
| to compete in industry/ <i>peningkatan kompetisi di level industri</i>  | <input type="radio"/>                 | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                |
| because of the availability of external fund and technical supports/ <i>karena ketersediaann dana dan bimbingan teknis dari donor</i> | <input type="radio"/>                 | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                |
| other, please specify, <i>lainya mohon sebutkan</i>   | <input type="radio"/>                 | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                |

**Q14** were these above expectations met?

*Apakah perusahaan anda mendapatkan hasil sesuai motivasi/ekspektasi anda di atas?*

| Motivations  | yes                   | Maybe                 | No                    |
|--|-----------------------|-----------------------|-----------------------|
| to gain more market access/ <i>untuk mendapatkan akses pasar yang lebih luas</i>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| to gain premium price/ <i>mendapatkan harga premium</i>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| to improve public image/ <i>peningkatan image publik</i>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| to have a better forest management/ <i>untuk pengelolaan hutan yang lebih baik</i>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| to compete to industry/ <i>peningkatan kompetisi di level industri</i>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| because of the availability of external fund and technical supports/ <i>karena ketersediaan dana dan bimbingan teknis dari donor</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| other please specify, <i>lainya mohon sebutkan</i>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**Q15** Please rate following challenges you faced before certification

*Berikan penilaian terhadap masalah yang anda hadapi sebelum sertifikasi?*

| Challenges/ tantangan<br>(masalah)   | Not<br>found/tidak<br>ditemukan | very<br>easy/sanga<br>t mudah | somewh<br>at<br>easy/ag<br>ak<br>mudah | neutral/<br>netral    | difficult<br>/sulit   | very<br>difficult/sa<br>ngat sulit |
|--|---------------------------------|-------------------------------|--|-----------------------|-----------------------|------------------------------------|
| Tenure issues/masalah tanurial   | <input type="radio"/>           | <input type="radio"/>         | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>              |
| weak forest protection (fire and<br>illegal logging)/ <i>proteksi hutan<br/>yang belum baik (kebakaran<br/>dan ilegal logging)</i>     | <input type="radio"/>           | <input type="radio"/>         | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>              |
| improper workers' health and<br>safety implementation/<br><i>implementasi kesehatan dan<br/>keselamatan kerja yang tidak<br/>layak</i> | <input type="radio"/>           | <input type="radio"/>         | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>              |
| external parties' pressure and<br>critics/ <i>tekanan dan kritik dari<br/>pihak luar</i>   | <input type="radio"/>           | <input type="radio"/>         | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>              |
| weak community relation/<br><i>relasi dengan masyarakat yang<br/>kurang baik</i>   | <input type="radio"/>           | <input type="radio"/>         | <input type="radio"/>                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>              |

|   |                       |                       |                       |                       |                       |                       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| unsustainable logging operation/ operasi pemanenan yang tidak lestari   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| poor biodiversity conservation and environmental protection/ konservasi biodiversitas dan proteksi lingkungan yang tidak baik | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| limited market access/ akses pasar yang terbatas  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Lack of capacity of the staff/ rendahnya kapasitas pekerja  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| High proper management costs/ tingginya biaya perencanaan yang layak  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Multiple certification preparation/persiapan sertifikasi lainnya yang bersamaan   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Changing staff attitude/merubah kebiasaan pekerja   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| other, please specify/ lainnya mohon sebutkan   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**Q16** Please rate following challenges you face after the certification  
*Berikan penilaian terhadap masalah yang anda hadapi setelah sertifikasi*

| Challenges after certification/ <i>masalah (tantangan) yang masih ada setelah sertifikasi</i>  | Not applicable/tidak ada | very easy/sangat mudah | somewhat easy/agak mudah | neutral/netral        | difficult/sulit       | very difficult/sangat sulit |
|--|--------------------------|------------------------|--------------------------|-----------------------|-----------------------|-----------------------------|
| Tenure issues/masalah tanurial   | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| weak forest protection (fire and illegal logging)/ <i>proteksi hutan yang belum baik (kebakaran dan ilegal logging)</i>              | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| improper workers' health and safety implementation/ <i>implementasi kesehatan dan keselamatan kerja yang tidak layak</i>             | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| external parties' pressure and critics/ <i>tekanan dan kritik dari pihak luar</i>  | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| weak community relation/ <i>relasi dengan masyarakat yang kurang baik</i>  | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| unsustainable logging operation/ <i>operasi pemanenan yang tidak lestari</i>   | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| poor biodiversity conservation and environmental protection/ <i>konservasi biodiversitas dan proteksi lingkungan yang tidak baik</i> | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| limited market access/ <i>akses pasar yang terbatas</i>  | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| Lack of capacity of the staff including lack of capacity of monitoring/ <i>rendahnya kapasitas pekerja</i>                           | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| High monitoring costs/ <i>tingginya biaya pemeliharaan</i>   | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| Multiple certification preparation/ <i>persiapan sertifikasi lainnya yang bersamaan</i>  | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| Changing staff attitude/ <i>merubah kebiasaan pekerja</i>  | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |
| other, please specify/ <i>lainya mohon sebutkan</i>  | <input type="radio"/>    | <input type="radio"/>  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       |



**Q17** will you continue the FSC certification? Why?

*Akankan perusahaan anda melanjutkan sertifikasi FSC? Kenapa?*

---

**Q18** Other comments and notes/*komentar dan catatan lainya*

---

**End of Block: Motivation and challenges towards certification/motivasi dan tantangan sertifikasi**

---

**Start of Block: Cost of Certification/ Biaya sertifikasi**

**Q19** how much is the approximate total cost (direct and indirect) spent by the company towards FSC certification?

*Berapa estimasi total biaya (langsung dan tidak langsung) yang dihabiskan perusahaan untuk sertifikasi FSC?*

- ☐ less than US\$1/ha/ *kurang dari US\$1/ha*
  - ☐ US\$1-2/ha
  - ☐ US\$2-3/ha
  - ☐ US\$3-4/ha
  - ☐ US\$4-5/ha
  - ☐ other please specify/*lainya mohon sebutkan*
- 

**Q20** How much was approximately given by the donors?

*Berapa estimasi dana yang diberikan oleh donor pada perusahaan anda untuk keperluan sertifikasi FSC?*

- ☐ less than US\$1/ha (1)
  - ☐ US\$1-2/ha (2)
  - ☐ US\$2-3/ha (3)
  - ☐ US\$3-4/ha (4)
  - ☐ US\$4-5/ha (5)
  - ☐ more than US\$5/ha, please specify/ *lebih dari US\$5/ha, mohon sebutkan* (6)
-

**Q21** Rank the cost towards certification according to their importance levels (from the most to the least) when you fulfilled the FSC standard

*Ranking aspek biaya yang diperlukan berdasarkan tingkat kepentingan (dari tidak penting sampai penting) untuk pemenuhan standar FSC*

| Cost items  | not important/<br><i>tidak penting</i><br>(1) | somewhat important/<br><i>agak penting</i> (2) | unsure/<br><i>tidak yakin</i><br>(3) | important/<br><i>penting</i> (4) | very important/<br><i>sangat penting</i> (5) |
|---|---|--|--------------------------------------|----------------------------------|--|
| staff training  | <input type="radio"/>                         | <input type="radio"/>                          | <input type="radio"/>                | <input type="radio"/>            | <input type="radio"/>                        |
| increase staffing for the company/ <i>pemenuhan jumlah staff</i>  | <input type="radio"/>                         | <input type="radio"/>                          | <input type="radio"/>                | <input type="radio"/>            | <input type="radio"/>                        |
| extensive baseline assessment such as biodiversity, environmental and social impact assessments (including the cost of hiring specialists)/ <i>baseline data untuk penilaian keanekaragaman hayati, lingkungan dan dampak sosial (termasuk didalamnya biaya sewa spesialis)</i> | <input type="radio"/>                         | <input type="radio"/>                          | <input type="radio"/>                | <input type="radio"/>            | <input type="radio"/>                        |
| solving social issues through CSR programmes/ <i>menyelesaikan masalah sosial melalui program CSE</i>   | <input type="radio"/>                         | <input type="radio"/>                          | <input type="radio"/>                | <input type="radio"/>            | <input type="radio"/>                        |
| creating company's management plan/<br><i>pembuatan rencana kelola terpadu</i>  | <input type="radio"/>                         | <input type="radio"/>                          | <input type="radio"/>                | <input type="radio"/>            | <input type="radio"/>                        |
| audit costs/ <i>biaya audit</i>   | <input type="radio"/>                         | <input type="radio"/>                          | <input type="radio"/>                | <input type="radio"/>            | <input type="radio"/>                        |
| infrastructure development and improvement (including for RIL implementation, environmental monitoring) /<br><i>pembangunan dan pengembangan infrastruktur (termasuk didalamnya untuk implementasi RIL, pemantauan lingkungan)</i>  | <input type="radio"/>                         | <input type="radio"/>                          | <input type="radio"/>                | <input type="radio"/>            | <input type="radio"/>                        |
| Fulfilling health and safety equipment and facilities/ <i>pemenuhan peralatan K3</i>  | <input type="radio"/>                         | <input type="radio"/>                          | <input type="radio"/>                | <input type="radio"/>            | <input type="radio"/>                        |
| public involvement such as stakeholder participation/ <i>partisipasi para pihak</i>   | <input type="radio"/>                         | <input type="radio"/>                          | <input type="radio"/>                | <input type="radio"/>            | <input type="radio"/>                        |
| other cost, please specify/ <i>biaya lainya mohon sebutkan</i>  | <input type="radio"/>                         | <input type="radio"/>                          | <input type="radio"/>                | <input type="radio"/>            | <input type="radio"/>                        |

**Q22** What costs were covered by the donor? (the answer can be more than one)  
*pemenuhan apa saja yang dibiayai oleh donor? (jawaban boleh dari satu)*

- ☐ Increased staffing/*pemenuhan staff*
  - ☐ staff training/ *training pekerja*
  - ☐ extensive baseline assessment such as biodiversity, environmental and social impact assessments/ *baseline data mencakup penilaian kondisi keanekaragaman hayati, lingkungan dan dampak sosial*
  - ☐ solving social issues through CSR programmes/ *pelaksanaan program CSR sebagai pencegahan/penyelesaian masalah sosial*
  - ☐ creating company's management plan/ *pembuatan rencana kelola terpadu*
  - ☐ audit/ *pelaksanaan audit*
  - ☐ infrastructure development and improvement (including infrastructure for RIL implementation, environmental monitoring, staff housing, health centre)/ *pembangunan dan pengembangan infrastruktur termasuk didalamnya implementasi RIL, pemantauan lingkungan, tempat tinggal pekerja, dan prasarana kesehatan*
  - ☐ fulfilling health and safety equipment requirements/ *pemenuhan sarana dan prasarana K3*
  - ☐ public involvement such as stakeholders participation/ *partisipasi para pihak dan keterbukaan terhadap publik*
  - ☐ other, please specify/*lainya, mohon sebutkan*
- 

**Q23** other comments and note regarding certification cost/ *komentar dan pendapat lainya mengenai biaya untuk sertifikasi*

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**End of Block: Cost of Certification**

### Start of Block: Advantages of Certification

**Q24** Rank the following benefits that you expected to obtain from FSC certification according to their importance levels/

*Ranking manfaat yang anda harapkan dari tersertifikasi FSC berikut berdasarkan tingkat kepentingan*

| Expected advantages   | Not important<br>/tidak penting | somewhat important/agak penting | unsure/<br>tidak yakin | important/<br>penting | very important/sangat penting |
|---|---------------------------------|---------------------------------|------------------------|-----------------------|-------------------------------|
| price premium for logs  | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |
| more market access/akses pasar yang lebih luas  | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |
| increased public image/reputation/ peningkatan image dan reputasi perusahaan  | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |
| better logging operations   | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |
| improved community relations/ penguatan relasi dengan masyarakat  | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |
| better worker safety and welfare/ peningkatan kesejahteraan dan keselamatan kerja pekerja                                   | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |
| improved transparency and stakeholder participation/ peningkatan transparansi dan partisipasi para pihak                    | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |
| better biodiversity conservation and environmental protection/ peningkatan konservasi biodiversitas dan proteksi lingkungan | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |
| improved management system (planning, monitoring, evaluation, and reporting)  | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |
| empowering the poor and less favoured/ pemberdayaan masyarakat kurang sejahtera   | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |
| Better forest protection/ peningkatan perlindungan hutan  | <input type="radio"/>           | <input type="radio"/>           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/>         |

|   |                       |                       |                       |                       |                       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Improved employee skills/capacity/ <i>peningkatan kapasitas pekerja/staff</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| other benefits, please specify/keuntungan lainnya, mohon sebutkan             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**Q25** Select perceived benefits from FSC certification your company has achieved/  
*Pilih manfaat yang dirasakan dari sertifikasi FSC oleh perusahaan anda*

| Achieved advantages  | achieved/tercapai (1) | not achieved/tidak tercapai (2) |
|--|-----------------------|---------------------------------|
| price premium for logs   | <input type="radio"/> | <input type="radio"/>           |
| more market access/ <i>akses pasar yang lebih luas</i>   | <input type="radio"/> | <input type="radio"/>           |
| increased public image/reputation/ <i>peningkatan image dan reputasi perusahaan</i>  | <input type="radio"/> | <input type="radio"/>           |
| better logging operations  | <input type="radio"/> | <input type="radio"/>           |
| improved community relations/ <i>penguatan relasi dengan masyarakat</i>  | <input type="radio"/> | <input type="radio"/>           |
| better worker safety and welfare/ <i>peningkatan kesejahteraan dan keselamatan kerja pekerja</i>   | <input type="radio"/> | <input type="radio"/>           |
| improve transparency and stakeholder participation/ <i>peningkatan transparansi dan partisipasi para pihak</i>   | <input type="radio"/> | <input type="radio"/>           |
| better biodiversity conservation and environmental protection/ <i>peningkatan konservasi biodiversitas dan proteksi lingkungan</i>                                   | <input type="radio"/> | <input type="radio"/>           |
| Improved management systems (planning, monitoring, evaluation, and reporting)/ <i>peningkatan sistem manajemen (perencanaan, pemantauan, evaluasi dan pelaporan)</i> | <input type="radio"/> | <input type="radio"/>           |
| Empowering the poor and less favoured/ <i>pemberdayaan masyarakat kurang sejahtera</i>   | <input type="radio"/> | <input type="radio"/>           |
| Better forest protection/ <i>peningkatan perlindungan hutan</i>  | <input type="radio"/> | <input type="radio"/>           |
| Improved employee skills/capacity/ <i>peningkatan skill dan kapasitas pekerja/staff</i>  | <input type="radio"/> | <input type="radio"/>           |
| other benefits please specify/ <i>benefit lainnya mohon sebutkan (13)</i>  | <input type="radio"/> | <input type="radio"/>           |

**Q26** Do economic benefits outweigh the costs?

*apakah benefit ekonomi lebih banyak daripada biaya yang dikeluarkan?*

- ☐ Yes
- ☐ No
- ☐ Not sure/ *tidak yakin*

**Q27** is it easier to sell the logs after the certification?

*Apakah penjualan kayu lebih mudah setelah tersertifikasi?*

- ☐ Yes
- ☐ No difference from prior to certification/ *tidak ada perbedaan signifikan dengan sebelum sertifikasi*
- ☐ It becomes more difficult after the certification/ *penjualan bahkan lebih sulit setelah tersertifikasi*

**Q28** Do you get a price premium from FSC-certified timber?

*apakah perusahaan anda mendapatkan price premium dari kayu bersertifikat FSC?*

- ☐ No price premium ever since my company was certified FSC/ *tidak ada price premium sejak tersertifikasi FSC* (continue to no 32/lanjutkan ke no 32)
  - ☐ There was a price premium but it no longer exists/ *ada price premium pada masa lalu namun sudah tidak ada pada saat ini* (if you choose this answer, please continue to no 29/jika anda memilih jawaban ini, lanjutkan ke pertanyaan 29)
  - ☐ There is still a price premium/ *ada price premium sampai saat ini* (If you answer this choice, please continue to no 30 and 31 jika anda menjawab pertanyaan ini lanjutkan ke pertanyaan no 30 dan 31)
  - ☐ There is a price premium but under a different scheme (such as cost sharing), please specify/ *Ada price premium namun dengan konteks dan skema yang berbeda (seperti cost sharing), mohon sebutkan* (Continue to Q32/lanjutkan ke Q32)
- 

**Q29** If you obtained the price premium several years ago and no longer get it now, how much was the price premium from certification? (answer this question and continue to no 32)

*Jika anda mendapat price premium beberapa tahun yang lalu dan tidak lagi mendapatkannya pada saat ini, berapakah price premium dari sertifikasi yang anda dapatkan di masa lampau? (jawablah pertanyaan ini kemudian lanjutkan ke pertanyaan 32)*

- ☐ less than 5%/ *kurang dari 5%*
- ☐ 5–10%
- ☐ 10–20%
- ☐ 20–30%

- ☐ 30–40%
- ☐ 40–50%
- ☐ other, please specify/*lainya mohon sebutkan*

**Q30** If you obtain a premium price, what is the percentage of CoC sales for which you receive a price premium?/ jika anda mendapatkan premium price, *berapa % penjualan yang mendapatkan price premium pada kayu yang masuk CoC?*

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**Q31** How much is the current price premium from certification?  
*Berapakah price premium pada saat ini?*

- ☐ Less than 5%/kurang dari 5%
  - ☐ 5–10%
  - ☐ 10–20%
  - ☐ 20–30%
  - ☐ 30–40%
  - ☐ 40–50%
  - ☐ Other, please specify, *lainya mohon sebutkan*
- 

**Q32** Are there any additional sales from certification?  
*apakah ada pertambahan penjualan sejak tersertifikasi?*

- ☐ No additional sales/ *tidak ada* (continue to Q35/*lanjutkan ke Q35*)
- ☐ There was additional sales but it no longer exists/ *sebelumnya ada pertambahan penjualan namun pada saat ini sudah tidak ada* (continue to Q33/*lanjutkan ke pertanyaan 33*)
- ☐ There is still additional sales/ *ada pertambahan penjualan* (continue to Q34/*lanjutkan ke pertanyaan no 34*)

**Q33** How much were the current additional sales from certification?  
*Berapakah pertambahan penjualan pada saat ini? (continue to Q36/*lanjutkan ke pertanyaan 36*)*

- ☐ less than 5%/kurang dari 5%
- ☐ 5–10%
- ☐ 10–20%

- ☐ 20–30%
- ☐ 30–40%
- ☐ 40–50%
- ☐ more than 50%, please specify/ *lebih dari 50% mohon sebutkan*

**Q34** How much are the current additional sales from certification?

*Berapakah pertambahan penjualan pada saat ini? (continue to Q35/Lanjutkan ke pertanyaan Q35)*

- ☐ less than 5%/ *kurang dari 5%*
- ☐ 5–10%
- ☐ 10–20%
- ☐ 20–30%
- ☐ 30–40%
- ☐ 40–50%
- ☐ more than 50%, please specify/ *lebih dari 50% mohon sebutkan* (6)



**Q35** did you get any recognition from external parties after you obtained FSC certification FSC?

*Apakah perusahaan anda mendapat rekognisi dari pihak eksternal setelah tersertifikasi FSC?*

- ☐ Yes, please specify from whom and what kind of recognition you got/ *jika iya, mohon sebutkan dari siapa dan rekognisi seperti apa yang anda dapatkan*
- 
- ☐ Unsure/ *tidak yakin*
- ☐ No

**Q36** Did certification eliminate the pressure from external organisations such as NGOs to your company? *Apakah sertifikasi mengurangi tekanan dari pihak luar seperti LSM?*

- ☐ Yes
- ☐ Unsure, because we experienced less outside pressure before certification/ *tidak yakin karena perusahaan mengalami sedikit tekanan dari pihak luar sebelum sertifikasi*
- ☐ No

**Q37** What economic benefits were facilitated by the donor? (the answer can be more than one)

*Benefit ekonomi apa yang difasilitasi oleh donor?*

- ☐ market access/ *akses pasar yang lebih luas*
- ☐ improved public image/ *peningkatan image publik perusahaan*
- ☐ price premium
- ☐ none/ *tidak ada*
- ☐ other please specify/ *lainya mohon sebutkan*
-

**Q38** Please rate the disadvantages of certification for your company  
 Mohon berikan penilaian tentang kerugian sertifikasi bagi perusahaan

| Certification disadvantages  | not<br>important/<br>tidak<br>penting | somewhat<br>important/agak<br>penting | unsure/tidak<br>yakin | important/<br>penting | very<br>important/s<br>angat<br>penting |
|--|---------------------------------------|---------------------------------------|-----------------------|-----------------------|---|
| audit cost/ <i>biaya audit</i>   | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| preparation costs */ <i>biaya persiapan</i>  | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| time/ waktu  | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| negative changes in forest management/<br><i>perubahan negative dalam pengelolaan hutan</i>                    | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| limit professional discretion and flexibility/<br><i>membatasi keleluasaan professional dan fleksibilitas</i>  | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| too much record keeping, too little action/<br><i>terlalu banyak penyimpanan dokumen, terlalu sedikit aksi</i> | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| too much public interaction/ <i>terlalu banyak interaksi dengan publik</i>                                     | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| too much openness/ <i>terlalu banyak keterbukaan</i>   | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| too much science and consultations/ <i>terlalu banyak science dan konsultasi</i>                               | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| capitulation to green group lobby/ <i>kapitulasi untuk meloby green group</i>                                  | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| public disclosure of audit results/<br><i>kerahasiaan hasil audit dari publik</i>                              | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |
| other, please specify/ <i>lainya mohon sebutkan</i>  | <input type="radio"/>                 | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                   |

*\*preparation cost is related to any cost incurred in the preparation of FSC certification to change or improve the existing management practices to meet FSC standards*

**Q39.** Any final comments about benefits of certification?

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### Annex 3. Field work documentation



KLIA concession area



Manual log yarding in BIOS





Nursery in KLIA



One-year planting area in BIOS



Rehabilitation for conservation corridor



Employee camp in BIOS



Mangrove crabs in KLIA





Illegal logging protection sign board in KLIA



Harvesting camp in BIOS